

Chilton's
**MOTOR
AGE**

OCTOBER 1952

PUBLIC LIBRARY
OCT 26 1952
DETROIT



In This Issue:

Fuel Gage Operation

TOUGH BUT OH SO **GENTLE!**



**TOUGH ON OIL-PUMPING ...
GENTLE ON CYLINDER WALLS**

Gentle because Steel-Vent's two wall-contacting steel sections have rounded edges which provide hairline contact and reduce drag to a minimum.

Gentle because the Steel-Vent spacer has extra wide vents that let oil flow through freely for extra cylinder wall lubrication.

Gentle because Steel-Vent's flexible, low-tension inner spring works only against the steel sections — holds them on cylinder wall with soft pressure.

Result: maximum life, minimum wear



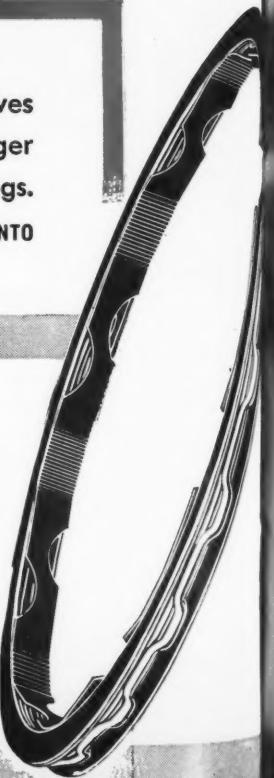
REGULAR OR CHROME-FACED — Hastings gives you your choice of Motor-Engineered Sets for all passenger cars with regular or with chrome-faced Steel-Vent Piston Rings.

HASTINGS MANUFACTURING CO., HASTINGS, MICH. • HASTINGS LTD., TORONTO
Piston Rings, Spark Plugs, Oil Filters, Casite, Drout

HASTINGS

STEEL-VENT PISTON RINGS

Regular or Chrome-Faced
FOR ALL PASSENGER CARS

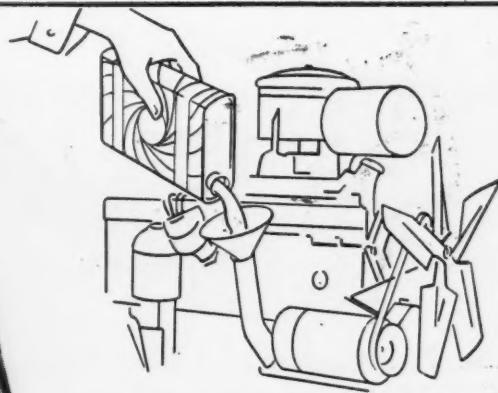


Every time you make an

OIL CHANGE

Sell a quart of **PERMATEX**

TOON-OYL®



It is surprising how often a quart of Toon-Oyl added to the crankcase oil will make a sluggish engine purr like a kitten. It's only good business to suggest it whenever you make an oil change and whenever a driver complains about performance of his engine. There's extra profit in it for you and you please your customer.

1. Cleans gummed working parts

Permatex Toon-Oyl dissolves carbon-gum deposits, frees sticky valves and rings, leaving working parts clean.

2. Eliminates excessive wear

Permatex Toon-Oyl is specially formulated to retard acid action and corrosion which is the cause of 90% of engine "wear".

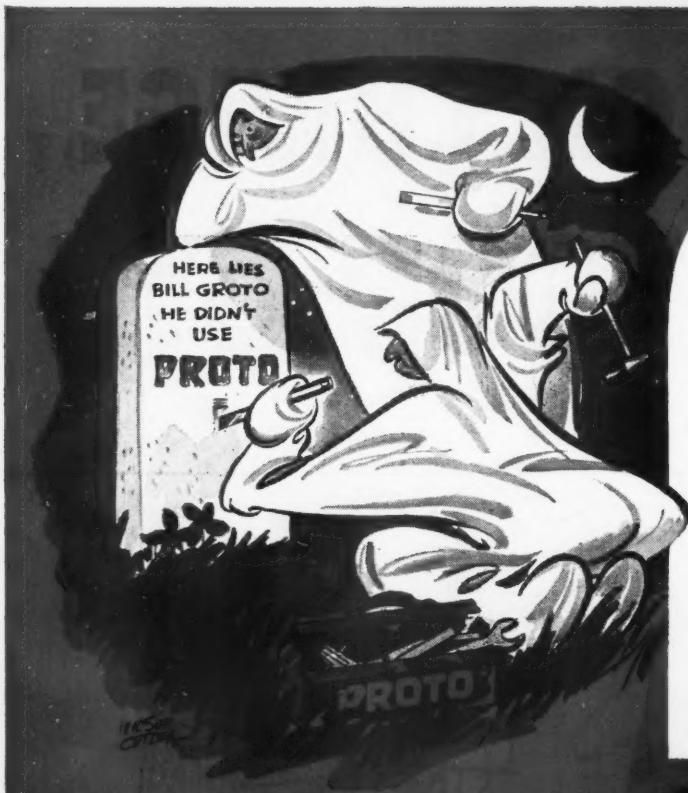
3. Increases power

Permatex Toon-Oyl increases power two ways... by freeing working parts from carbon-gum and through improved lubrication by coating metal parts with a friction resisting film.

PERMATEX COMPANY, INC.
Brooklyn 35, N. Y.

Over 50 Chemical Products for
better automotive maintenance

PERMATEX TOON-OYL®



**Tool Experts Know,
and Even Ghouls...that**

**PROTO means
PROfessional
TOols!**

Superior design is one of the big reasons why PROTO tools are preferred by professionals. As new tool requirements develop, you can look to PROTO for the thoroughly user-tested designs to meet these needs. Each tool is light but strong, balanced, easy handling and snug fitting. Long life and extra safety are due to properly engineered designs, accurate manufacture, special alloy steels and scientific heat treating. Your tool dollar is protected by PROTO's positive guarantee, and the extensive line assures you of getting the exact tools you need. Buy PROTO, the truly professional tools, from your dealer today. Send 10¢ for 68-page catalog to

PLUMB TOOL COMPANY
2226Q Santa Fe Ave.,
Los Angeles 54, Calif.

Eastern Factory—
Jamestown, N. Y.



The PROTO Line Includes Wrenches of All Types, Pliers, Screwdrivers, Punches, Chisels, Sockets & Handles, Pullers, Tool Boxes, Industrial Tools and Many Others.

5282



Chilton's MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL
Reg. U. S. Pat. Off.

Frank P. Tighe
Editor

Charles M. Kenyon
Managing Editor

J. K. Montgomery
Technical Editor

Arthur H. Nellen, Jr.
Service Editor

Marcus Ainsworth
Specifications Editor

Howard Kohlbrenner
Art Director

Leonard Westrate
Detroit News Editor

Joseph Geschelin
Detroit Technical Editor

G. H. Baker
Washington Editor

K. Rannels
R. M. Stroupe
Washington News Editors

R. Raymond Kay
Pacific Coast Editor

Paul Wooton
Washington Member of
the Editorial Board

Member



NBP

For THE AUTOMOTIVE SERVICE INDUSTRY

LXXI, No. 11

October, 1952

In This Issue . . .

Newscene	33
Price, Weight & Body Table	36
New Car Registrations	37
Management Clinic	38
That's What the Man Said	39
Important Factors on Wheel Alignment	40
Pop Stops a Runaway	42
How Auto-Lite Fuel Gages Operate	44
Merchandising and Promotion	46
Modernization for Any Shop	48
How to Check Bent Spindles	50
New Products Show Window	51
Hot Tips on Hot Rods	55
An Early Page in Motor Age	56
Body Shop Tips	57
Building the Jabro Sportscar	58
Shop Kinks	60
Reader's Clearing House	85
Calendar of Coming Events	156
Advertisers' Index	176

Copyright 1952 by Chilton Company (Inc.)

G. C. BUZBY, President and Manager Automotive Division
E. H. MILLER, ADV. MGR. E. W. HEVNER, CIR. MGR.
CHARLES W. HEVNER, Research Mgr.

REGIONAL MANAGERS

RUSSELL W. CASE, JR., Philadelphia

J. A. LAANSMA, Detroit

CURTIS F. MOSS, Chicago

WILSON HOWE, New York

H. M. WERTZ, Chicago

R. J. BIRCH, San Francisco

BEN E. BALL, Cleveland

L. H. JACKSON, Los Angeles

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone GRanite 4-5600. New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8600. Chicago 1, Ill.—1000 916, London Guarantee & Accident Bldg., Phone Franklin 2-4243. Detroit 2, Mich.—1015 Stephenson Bldg., Phone Trinity 5-2090. Cleveland 14, Ohio—1030 National City Bank Building, Phone Cherry 1-1888. Washington 4, D. C.—1038 National Press Bldg., Phone Sterling 1844. San Francisco 4, Cal.—300 Montgomery St., Phone Douglas 2-4893. Los Angeles 5, Cal.—3158 Wilshire Blvd., Phone DUnkirk 7-2119. Member of Audit Bureau of Circulation.

One of the Publications Owned by
CHILTON COMPANY (INC.)

Executive Offices

Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

Officers and Directors

JOSEPH S. HILDRETH, President

Vice-Presidents

HARRY V. DUFFY P. M. FAHRENDORF

EVERIT B. TERHUNE

WILLIAM H. VALLAR, Treasurer

JOHN BLAIR MOFFETT, Secretary

GEORGE T. HOOK MAURICE E. COX
TOM C. CAMPBELL FRANK P. TIGHE

L. V. ROWLANDS

GEORGE MAISWINKLE, Asst. Treas.

MOTOR AGE, Vol. LXXI, No. 11. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions and all Latin-American countries \$3.00 per year. Canadian \$3.00; foreign \$7.00 per year; single copies, 40 cents.



"This is what convinces 'em"

"What do most automotive dealers want most? Better business, of course. And what do they expect advertising to do for them? They expect it to give them sales support where they can profit most from it—right around their own place of business.

"When I tell dealers that Farm Journal is included in our promotion plans, they know they're getting what they want, because I can show them the proof with these county folders."

These County Analysis Folders

show, county by county the country over, the number of farms, the number of farm-owned automotive units, the standard of living and economic status of farm families. They also show the tremendous circulation which Farm Journal has among these families.

Hundreds and hundreds of requests have been received for these folders—from dealers, jobbers and manufacturers who realize that rural customers are among the very best customers of the automotive industry. They welcome this information

about the tremendous local support Farm Journal gives them.

Farm Journal gives you this tremendous local support because it is the kind of magazine it is—a specialist in Rural America, with a larger circulation there than any other national magazine. And Farm Journal is so big in its specialized field that it has coverage in the better rural areas like a local newspaper.

What does Farm Journal do for you? Send for the County Analysis Folder for your territory and see. Just write Dealer Service Department.



ANOTHER GOOD OPPORTUNITY TO BUILD GREATER BUSINESS LOCALLY. Farm Journal's unique "Keep 'Em Rolling" editorial program constantly promotes better maintenance of automotive equipment. These features are welcomed by dealers as well as farmers for the preventive maintenance suggestions they contain, and for the emphasis they place on getting service work done at the right time, when both profit most.

Farm Journal

WASHINGTON SQUARE, PHILA. 5, PA.
GRAHAM PATTERSON, PUBLISHER

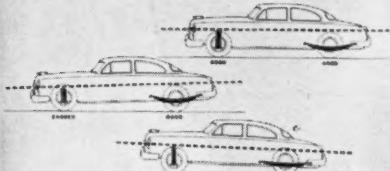
Chilton's MOTOR AGE, OCTOBER, 1952

SEND FOR THIS FREE COIL SPRING CHECK-UP CHART

Ask us about

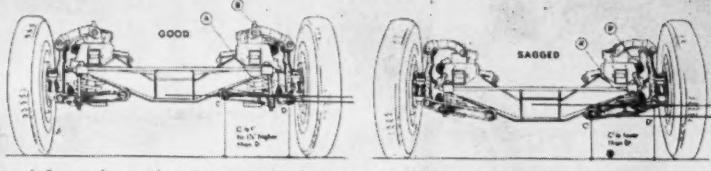
FREE MOOG COIL SPRING CHECK-UP

A car usually will need coils replaced when the front is noticeably low or the car owner complains of bottoming.



It is always necessary to check both the front and rear ends of the car at the time any changes are made in the front or rear springs.

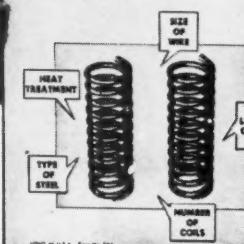
Let us check for weak or sagged coils



1. Compare distance A between lower control arm bumper and frame with distance B between upper bumper and upper control arm. Distance B should always be approximately $\frac{1}{2}$ of distance A. When distance B becomes equal to or greater than A, as shown in illustration at right, the coil springs should be replaced.

2. With tires equally inflated, park the car on a level floor. Referring to the illustrations point D should always be from 1 to $1\frac{1}{2}$ " lower than point C. When D' is equal to or higher than C as shown in above illustration, the Coil Springs should be replaced.

There's More to Coil Springs Than Meets the Eye



DON'T COMPARE COIL SPRINGS BY LOOKING AT THEM

Because of the variable factors involved, this comparison can only be accurately made on equipment designed for that purpose.

Moog Coil Springs are designed to carry the car at the proper height, give superior performance, and long life. Always install in matched pairs!

WE RECOMMEND AND INSTALL MOOG COIL SPRINGS

COIL SPRINGS—Front Only

Covering Very Popular Models — See Streamliner for Complete Listing

Heavy Duty — For "Service Duty" or Heavy Loads

Regular Service — For City Driving

Extra Service — For All Purpose Use

Light Duty — For "Service Duty" or Heavy Loads

Copyright 1952 by MOOG INDUSTRIES, INC., St. Louis, Mo.

Helps You Sell Coil Springs in Matched Pairs

Here's a sales help you will want, to show your car owner customers why they need coil springs replaced due to sagging, etc. Moog Coil Springs are especially designed for replacement and should be installed in matched pairs for top performance and safe driving. Send for this Coil Spring Check-up Wall Chart now—use handy coupon or see your closest Moog Distributor.

MOOG INDUSTRIES, INC.
St. Louis 14, Mo.



1952 M.I.I.

MOOG INDUSTRIES, INC.
6653 Easton Ave., St. Louis 14, Mo.

Please send free Coil Spring Check-up Chart.

Firm.....

Individual.....

Street.....

City..... State.....

Type of Alignment Equipment.....

Jobber.....



For the
BEST in BEARING SERVICE...
 Ask your Federal-Mogul Jobber!

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN



Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Service • Exchange Insert Rods, Rebabbitted Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Shims and Shim Stock.



Like
taking out
your best
blonde



Posed for
PUROLATOR
by Bert Lahr,
famous comedian,
star of stage, screen,
radio and television.

...and getting paid for it!

What does Bert mean? Simply this! Dealers everywhere find selling Purolators just their dish! Two profits on every sale . . . one on the refill . . . and one on the extra oil that goes with every refill!

In the first place—according to a recent survey—9 out of 10 motorists buy when the dealer shows them a dirt-clogged filter, explains how dirt wrecks engines.

More important—most of these motorists buy

a Purolator* Micronic when they're shown the job a Purolator element can do!

Actually, every car on the road needs an oil filter. And every car with a filter needs, and can be sold, 2—or more—Purolator Micronic* refills a year.

So—stock Purolator to sell every car that calls!

Remember—first, last, and always . . . Purolators are No. 1—with everyone! No. 1 in the way they're built! No. 1 in the way they're advertised and sold!

PUROLATOR PRODUCTS, INC.

Rahway, New Jersey, and Toronto, Ontario, Canada

PurOlator
(ENGINEERED FOR) **EVERY MAKE OF CAR)**

Micronic
OIL FILTER



*Reg. U. S. Pat. Off.



Lamar F. Noble

SALESMANAGER & TREASURER
BROOKS-NOBLE AUTO PARTS & MACHINE CO.
JACKSON, MISSISSIPPI

Gilchrist

"LAST SEASON was one of the best we've had in the battery business, and it's mainly because of the extra big pluses we got when we signed up to handle the Auto-Lite Battery line," says Lamar F. Noble.

"We expect an even bigger volume of business and profits this coming year with the Auto-Lite Battery line because only Auto-Lite has so much to offer:

original equipment, national radio and television shows, a strong national magazine and farm magazine advertising campaign and now-'Operator 25' Service.

"Add to this great line-up the fast-growing preference for the premium-profit 'Sta-ful' in our territory, and you'll understand why we're such Auto-Lite boosters."



AUTO-LITE BATTERIES



You can't build a good reputation with inferior brake lining...

The only way you can be sure of holding customers is to use quality lining. So reline with Raybestos PG Proving Ground Tested Sets...brake linings built to last longer on today's vehicles and make safer stops in today's traffic. They will complement your shop's good mechanical work and increase your profits.



INSIST ON THE RAYBESTOS BRAND ON EVERY PIECE OF BRAKE LINING. IT'S THERE FOR YOUR PROTECTION.

PG for riveting

Ray-BOND for bonding

50 YEARS OF SERVICE...50 YEARS OF PROGRESS...1902-1952

Raybestos[®]

AMERICA'S BIGGEST SELLING BRAKE LINING

PG SETS

RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., Bridgeport, Conn.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Radiator Hose • Fan Belts • Industrial Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Sintered Metal Products • Abrasive and Diamond Wheels • Bowling Balls



PULL WHEELS AND USE THE RAYBESTOS BRAKE CERTIFICATE

These two things, plus the quality of Raybestos Brake Lining, will give you the keys to brake service volume. And month after month, powerful pre-selling Raybestos ads like the one below will support you by urging city and rural car owners to have their brakes certified safe.



YOUR CUSTOMERS AND PROSPECTS WILL READ THIS RAYBESTOS AD

Hard-hitting advertisements like this are appearing regularly in *The Saturday Evening Post* and in *Farm Journal*. Thousands of car owners right in your own neighborhood will become brake lining conscious...will want to buy Raybestos.



for **BOTH**
voltages...



SUN
makes it easier
for you

to service the cars of today...and tomorrow

...with test equipment in advance of the times

Here is an exceptional opportunity offered by SUN to every service shop . . . an opportunity to prepare and modernize—in advance—for new and revolutionary developments in the automotive industry.

Available NOW . . . is the newly engineered SUN Master Motor Tester and Accessory Group for completely and accurately testing *both* 6 and 12 volt automotive engines. Each of these new units has been designed to make every test on 6 and 12 volt systems in compliance with the car manufacturer's approved methods. It is now possible, with this new SUN Equipment, to modernize *your* testing department today—in the sure knowledge that these new units will not only service the cars and trucks of the present—but those of tomorrow as well.

To help you modernize . . . SUN has developed a Modernization Plan that tells you how easily you can convert *your* shop and equipment—with new 6-12 volt units . . . how your old 6 volt testers can be used as a valuable trade-in. Prepare for tomorrow—today! Talk to your nearest SUN Representative—or write directly to us for complete information on the Modernization Plan.

SUN Equipment is also available for fleet and military use—in 6-12-24 volt units.

ELECTRIC CORPORATION

4353 AVONDALE AVENUE
CHICAGO 31, ILLINOIS

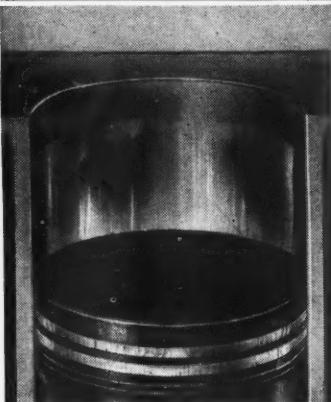
SUN Technical Training Schools in 16 cities. Night and Day Courses.

86081

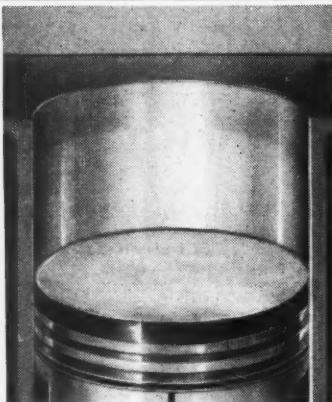
NEW MOTOR OIL! SUPER TOUGH!

SUNOCO H. D. DYNALUBE

Tougher Film Strength for Extra Margin of Safety!



High speeds and heat where piston rings rub cylinder walls cause inferior oil to break down. Piston rings and cylinder walls become scuffed like this. Result: Lost power, wasted gas and oil.



New H. D. Dynalube is twice as tough as ordinary detergent oils. It fights wear at all speeds, all temperatures—keeps cylinder walls smooth, and rings tight-fitting.

Cleans 6 Times Better Than Ordinary Motor Oil!



Inferior motor oil builds up gummy deposits of varnish on the valves, piston rings and hydraulic valve lifters. Engines run hot, wear faster and burn extra gasoline and oil.



New H. D. Dynalube cleans away varnish and carbon and keeps them in suspension until your next oil change. (For maximum protection, change oil every 1000 miles.)

Exceeds all manufacturers' recommendations for all passenger cars!

New Heavy-Duty (H. D.) Dynalube is super-tough and super-detergent. Fights wear better . . . longer.

Gives complete protection under severest engine heats and pressures!

New H. D. Dynalube *exceeds* the toughest engine requirements of any car on the road today!

Keeps engines NEW twice as long as ordinary detergent motor oils!

New H. D. Dynalube is actually *more than twice as tough* as ordinary detergent motor oils.

MEETS MILITARY SPECIFICATIONS MIL-02104



Another good reason → customers stay with you when you sell Sunoco products!

only DELCO ENGINEERED RIDE CONTROL SHOCK ABSORBERS

QUALITY-BUILT
FEATURES INSURE
LONG LIFE
TOP PERFORMANCE

MIRROR-FINISHED
PISTON ROD
assures positive wiping action

MULTI-LIP SEAL
seals in fluid, seals out dirt

SEALED FOR LIFE
all parts permanently sealed

ROD GUIDE AND BEARING
insure positive, quiet action

CYLINDER
precision finished bore insures
proper fit

RESERVOIR TUBE
engineered for correct fluid
stability

PISTON
precision made for trouble-
free operation

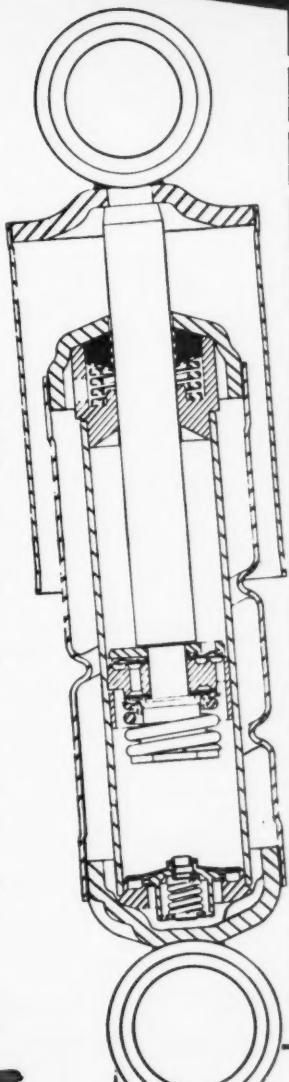
"DUPLEX" VALVE DESIGN
assures uniform ride

SPECIAL FLUID
Delco-developed for all cli-
mates, all conditions

MOUNTING RINGS
AND BAYONETS
scientifically welded for maxi-
mum strength, durability

**EASIEST
TO STOCK**

**EASIEST
TO SELL**



GIVE YOU THESE
TOP-PROFIT
ADVANTAGES

ENGINEERING DEVELOPMENT

Today, as in the past, Delco is the recognized leader in shock absorber development and engineering. This is proved by the fact that Delco holds many basic patents in shock absorber design and continues to pioneer new improvements in "ride control."

MANUFACTURING FACILITIES

Delco's complete manufacturing facilities—unmatched in the industry and exclusive with Delco—insure greater accuracy, higher quality and more uniformity. Many precision operations—which Delco alone performs—insure better performance and longer shock absorber life.

MARKET COVERAGE

More than half the cars on the road today are equipped with Delco shock absorbers—more Delcos are in use than any other make. This tremendous pre-sold market is your key to easier sales—at more profit!

APPROVED PRODUCT

Leading automotive engineers specify Delco shock absorbers for more new cars than any other make. They know that Delcos fulfill all requirements for smooth, efficient and dependable operation—with assured long life.

A COMPLETE LINE

Delco makes the right type of shock absorber for every car! No matter what your customer needs, you have it with Delco. That is why more than 80,000,000 Delco shock absorbers are in use today . . . why Delco's complete line is your easiest road to satisfied customers and quick profits!

DELCO SHOCK ABSORBERS

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

DELCO PRODUCTS DIVISION
GENERAL MOTORS CORPORATION • DAYTON, OHIO

TO THE TOP

R. A. STRANAHAN PRESIDENT
F. D. STRANAHAN TREASURER

CABLE ADDRESS
CHAMPION

CHAMPION SPARK PLUG COMPANY

FELTHAM ENGLAND — PARIS FRANCE — WINDSOR CANADA

TOLEDO 1, OHIO, U.S.A.

October 1st, 1952

Dear Champion Dealer:

This month we'd like to tell you how Champion plans to help you step up your profits and keep your cash register ringing.

We're going to shoot with the grand poster you see on the right. It's loaded with attention-getting human interest and will appear in the major magazines listed beside it.

In addition, it will be featured throughout November in compelling sales messages via television in 29 metropolitan markets, with a weekly audience of 12 million.

Make our advertising your advertising. Display the poster — call the customer's attention to your ad in current magazines — and then ask him to let you get his car set for winter.

Next month we're going to tell you all about a new program which we've tested and found to be a real producer of spark plug sales and profits. See you then.

Best regards,

Jim L

P.S.: Grit, the small town weekly newspaper, just completed a consumer survey showing the preference for Champions at 65.5% — next highest 12.5%. This preferred position is substantially the same in every survey we've ever seen.



DEALERS *IN THE NATION*

POST
•
LIFE
•
COLLIER'S
•
TIME
•
NEWS-WEEK
•
AMERICAN MAGAZINE
•
BETTER HOMES AND GARDENS
•
AMERICAN LEGION
•
PATH-FINDER
•
GRIT

LOOK OUT for Winter



AMERICA'S FAVORITE
CHAMPION
SPARK PLUGS

Here are **5** reasons why

1

SENSATIONAL NEW KIND OF ADVERTISING WILL BRING CUSTOMERS DIRECTLY TO YOUR DOOR!

**Get Extra Sales and Profits from
Western Union Operator 25 . . . It's easy!**

Today, more than ever before, car owners need and want an accurate battery charge and condition test. AAA reports more than 10 million car breakdowns in 1951 were caused by battery failure. And now Willard Dealers can provide a quick, accurate test that car owners can understand. Over 73 million sales messages in Willard national advertising will feature this battery charge and condition test in a big way. And every single message will urge car owners to locate their Willard Dealer by calling Western Union and asking for Operator 25.



PUT WESTERN UNION OPERATOR 25 TO WORK FOR YOU!

Willard Foots the Bill . . . Costs You Nothing

- Use this great new Willard service to help you sell more batteries and other under-the-hood products and services. Contact your Willard Distributor right now . . . delay can cost you extra profits. If you don't know your Willard Distributor, fill out coupon on right-hand page and mail it today.



Willard

FACTORIES: INC., CLEVELAND • LOS ANGELES • BIRMINGHAM • PORTLAND • ALBION, N.Y. • TORONTO

you can make more money selling **Willard!**

- 2** *It's easier to sell Willard because more car owners prefer Willard than any other battery!*
- 3** *Year after year, Willard has supplied batteries to more manufacturers for original equipment than any other battery maker...and will again in 1952!*
- 4** *In the complete Willard line you have a battery for everyone — retail prices start at \$16.65.*
- 5** *50 years and 100 million batteries have proved Willard the world's most dependable battery.*

Mail Coupon Below

for more facts on these and other
big reasons why you can make more
money selling Willard.

Send me

FACTS FOR WHOLESALEERS

Willard Storage Battery Co., Dept. B-10
1220 Huron Road, Cleveland 15, Ohio

Yes, I would like all of the reasons why I can make
more money as a wholesaler for Willard Batteries, in-
cluding profit opportunity figures specifically covering
my own particular territory.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Send me

FACTS FOR DEALERS

Willard Storage Battery Co., Dept. B-10
1220 Huron Road, Cleveland 15, Ohio

Yes, I would like all of the reasons why I can make
more money selling Willard Batteries.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

AMAZING RADIO-ACTIVE TRACER TESTS PROVE—

Mobiloil's Powerful NEW Wear-Fighting Action



New Super-Detergent Formula Means Longer Engine Life—Fewer Repairs!

It's true—proved by radio-active tracers from the Oak Ridge atomic pile! Mobiloil's new combination of ingredients can stretch the life of car engines—can drastically reduce engine wear during the periods when most wear occurs . . . during starts and warm-ups, and stop-go driving. Less engine wear means less spent on repairs, improved oil economy, too!

Here's how we prove it... Radio-active piston rings are installed in test engines. "Hot" metal particles, scuffed off the rings into the motor oil, are then measured by Geiger counter. The result proves Mobiloil with new super-detergent formula provides new wear-fighting action—for top performance, peak operating economy!

WHY SELL LESS THAN THE
World's Largest-Selling Motor Oil



SOCONY-VACUUM OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

These Products have Acceptance

Packard
REG. U. S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation -
Warren, Ohio

**FOREMOST BUILDER OF
AUTOMOTIVE AND AVIATION WIRING**



PACKARD LOW-TENSION CABLE

As with Packard's other products, Packard low-tension cable is used as original equipment on more cars, trucks, buses and tractors than cable of any other make. Packard's "249 Compound" insulation, by every laboratory test and by the test of long, hard usage, has exceptional resistance to heat, oil, chemicals and abrasion.



PACKARD IGNITION CABLE

Long considered the "standard of the automotive industry," Packard high-tension cable is used as original equipment on more cars, trucks, buses and tractors than cable of any other make. Packard FOUR-FORTY and Packard LAC-KARD ignition cable are designed to deliver balanced performance in every make and model car, truck, bus and tractor in operation today.



PACKARD BATTERY CABLE

Packard battery cables are used as original equipment on more cars, trucks, buses and tractors than cables of any other make. Packard battery cables are full size, full weight . . . are available with LEADALLOY terminals or leaded brass terminals. Both types are packaged in individual cartons—both deliver top performance—both have acceptance, everywhere.

Why wait for Winter?



... mean the most
when the weather
is at its worst!

CASH IN ON COLD WEATHER SERVICE NOW!

Beat your competitors to those winter profits! Get your customers' cars ready for cold weather — now — with AC Quality Products. They're time-tested for superior service during wintertime or at any time of year.



With Patented CORALOX Insulator — Factory equipment on more new cars than any other make of spark plug.



The Industry's Fastest-Growing Line — Original or approved equipment on Buick, Chevrolet, Cadillac and Olds.



The Only Complete Line — More than 100,000,000 have been built — more than 40,000,000 are in daily use.

SPEEDOMETER CABLES • AIR CLEANERS • FLEXIBLE LINES • GAS STRAINERS

AC SPARK PLUG DIVISION



GENERAL MOTORS CORPORATION

All Brake Shoes



Wedge mark indicates
750 lbs. per square inch
ram-pressure
applied here.

★ You can depend upon Wagner quality because
Wagner products are used as original equipment
by automobile, truck and trailer manufacturers.



Wagner

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NeRel • CoMoX BRAKE LINING • AIR BRAKES

Bonded by Wagner with CoMaX Lining

are *Pressure
Tested*



750 LBS. PER SQUARE INCH RAM PRESSURE—that is the final test before shipment of each shoe lined by Wagner with CoMaX Brake Lining "bonded on".

Wagner uses special equipment to exert this tremendous pressure against the lining to test its firmness of bond to the shoe. The little "wedge mark" left by the powerful ram indicates that the bonding withstood this rigorous test. It means that

when you install Wagner lined shoes you know that they have each been individually tested as an added precaution against failures that cause "comeback" jobs.

WAGNER CoMaX BRAKE LINING is also available in bonded or drilled sets. Also in rolls, blocks, slabs, or cut segments.

For details, consult your Wagner jobber or write us.

Wagner Electric Corporation

6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.
(Branches in principal cities in the U.S. and in Canada)



The 3R's for better brakes...

REFILL with Wagner Lockheed Brake Fluid

REPLACE with Wagner Lockheed Brake Parts

RELINE with Wagner CoMaX Lining

852-6

*...the best known
name in brake service*

TACHOGRAPH • ELECTRIC MOTORS • TRANSFORMERS

INDUSTRIAL CRANE BRIDGE BRAKES

Please send me the latest Bulletins on Hydraulic
Brake Servicing—HU-17H, HU-197.

NAME _____
FIRM NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____





"I've
Made Money
on WEEDS
since

Harold J. Runnfeldt
Runnfeldt & Belmont
Oak & Chestnut Streets
Winnetka, Illinois

Way Back When"

"I sold regular WEED tire chains way back when they were used mostly for traveling on muddy roads. Now I sell WEED V-Bar chains which last so much longer on hard roads. I never stopped selling WEED chains because everybody knows them and they always give good service. I make money selling WEED tire chains."

Don't
S'kid Yourself

STOPPING ON GLARE ICE AT 20 M. P. H.

.....77 ft.	with Reinforced Tire Chains
Natural Rubber Tires*209 ft.
Winterized Tires188 ft.
Mud-Snow Tires201 ft.

*For stopping or starting on ice or snow, synthetic rubber tires skid or spin 10% to 50% more than natural rubber

TRACTION
ON PACKED SNOW

In pulling power tests on hard-packed snow, conventional natural rubber tires* registered 301 lbs., winterized tires 268 lbs., mud-snow tires 374 lbs., and reinforced tire chains 1120 lbs.

(ALL FIGURES IN THIS PANEL ARE QUOTED FROM NATIONAL SAFETY COUNCIL TESTS)

WEED V BARS

**The Tire Chain that Doubles the Wear
and Doubles the Bite on Ice or Snow . . .**

- Yes, and you'll make money if you get your display of WEED chains set up early. You'll have time to show your customers the WEED V-Bars' flaring reinforcements with 288 gripping points that double the bite on ice or snow. Their opposite right-left construction gives two-way grip and balanced traction. So, WEED V-Bars stop

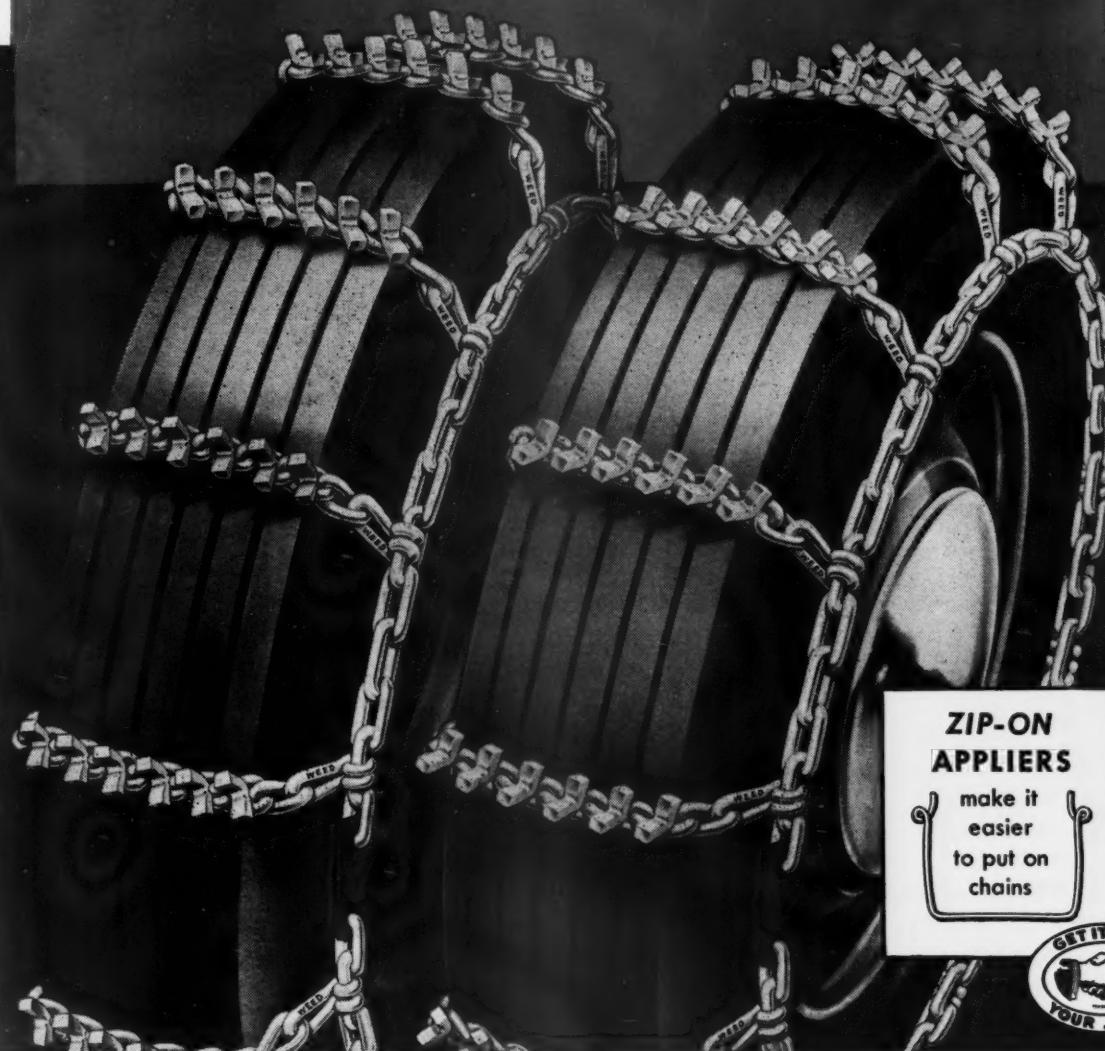
- shorter and safer, start quicker, hold straighter and wear longer especially when snug.

- WEED Zip-On Appliers make it easier to put on chains. Sell a pair of Zip-Ons with every pair of WEEDS.

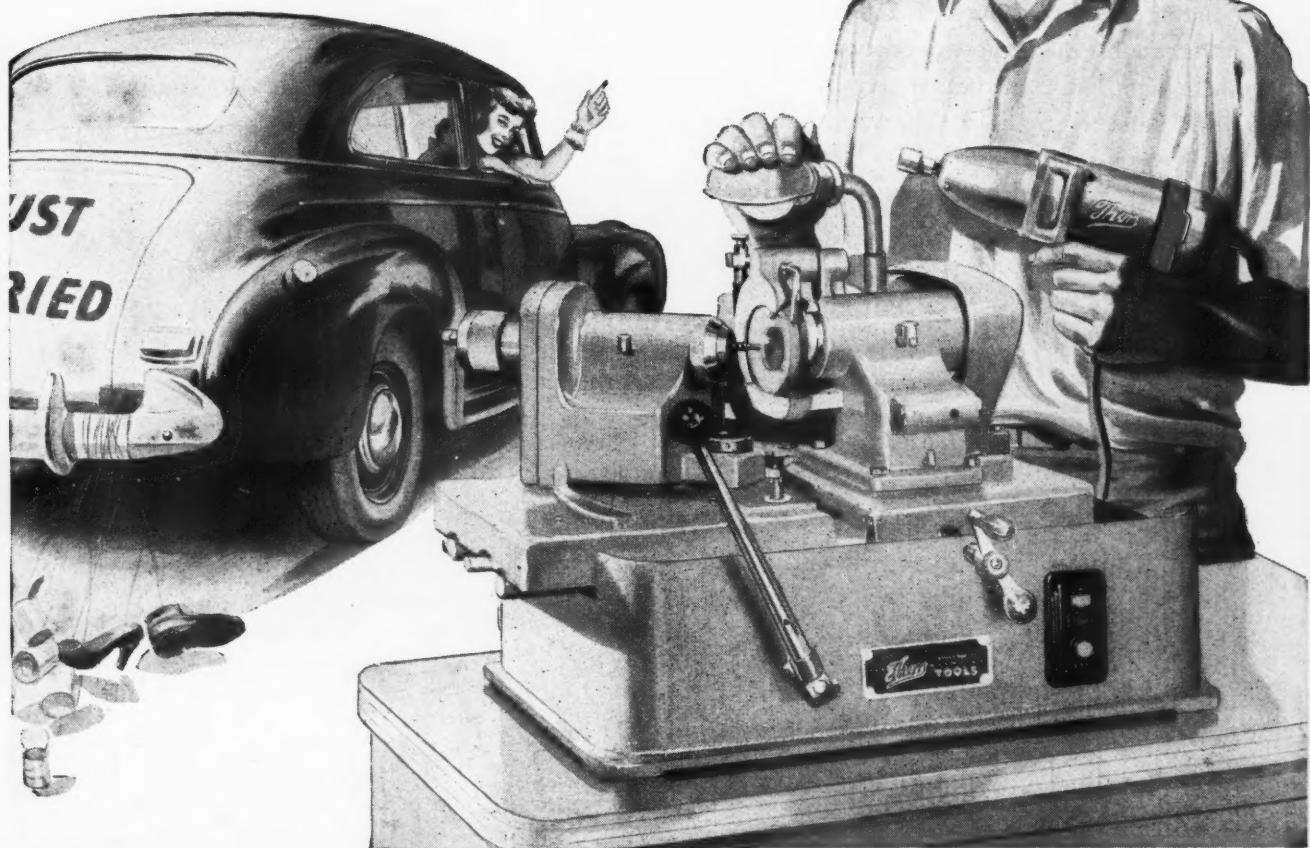


AMERICAN CHAIN & CABLE COMPANY, INC.
York, Pa. • Bridgeport, Conn.

**Flaring Reinforcements with Right-Left Construction
GIVE DOUBLE GRIP and REDUCE SIDE-SKID**



Good thing the shop is equipped with Thor tools!



"Emergency Service" is STANDARD SERVICE in your shop when you're equipped with Thor Power Tools . . . the amazing new Thor Impact Wrenches for tear-down and reassembly in minutes instead of hours . . . the precision-built Thor VALVE REFACER and SEAT GRINDER that make any mechanic a valve expert over night . . . powerful drills, sanders, polishers. These are the REAL money-makers in the service industry today. Ask your jobber for a Thor Catalog. Or write "Thor Tools," Aurora, Ill.

**VALVE REFACERS • VALVE SEAT GRINDERS • SANDERS
IMPACT WRENCHES • POLISHERS • DRILLS • SAWs
BODY AND FENDER HAMMERS • GRINDERS • HAMMERS
BENCH GRINDERS • SCREWDRIVERS • ACCESSORIES**

FACTORY SERVICE BRANCHES IN 20 PRINCIPAL CITIES



Join the Switch to Exide...



DO IT NOW! Exide offers more than ever before . . . more of everything you need to build a fast-growing, money-making battery business.

EXIDE DEPENDABILITY . . . batteries you can trust, a top-ranking requirement of the car owner.

EXIDE LONG LIFE . . . proved through the years . . . now longer than ever before.

EXIDE NAME . . . known to millions through years of consistent national advertising . . . over 130,000,000 messages in 1952.

EXIDE BATTERIES ARE FULLY GUARANTEED NATION-WIDE.

THE COMPLETE EXIDE LINE, with a price range that gives both dollar-savers and quality-seekers *more for their money*. Backed by **EXIDE'S PROVED SERVICE ROUTINE** that's a sure-hit business booster and profit maker.

AND . . . VERY IMPORTANT . . . The Exide Distributor is an excellent supplier. You can count on him for fresh stock . . . prompt deliveries . . . quick, fair adjustments . . . reasonable terms.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 2
Exide Batteries of Canada, Limited, Toronto

ULTRA START . . .
New leader of the famous Exide line.

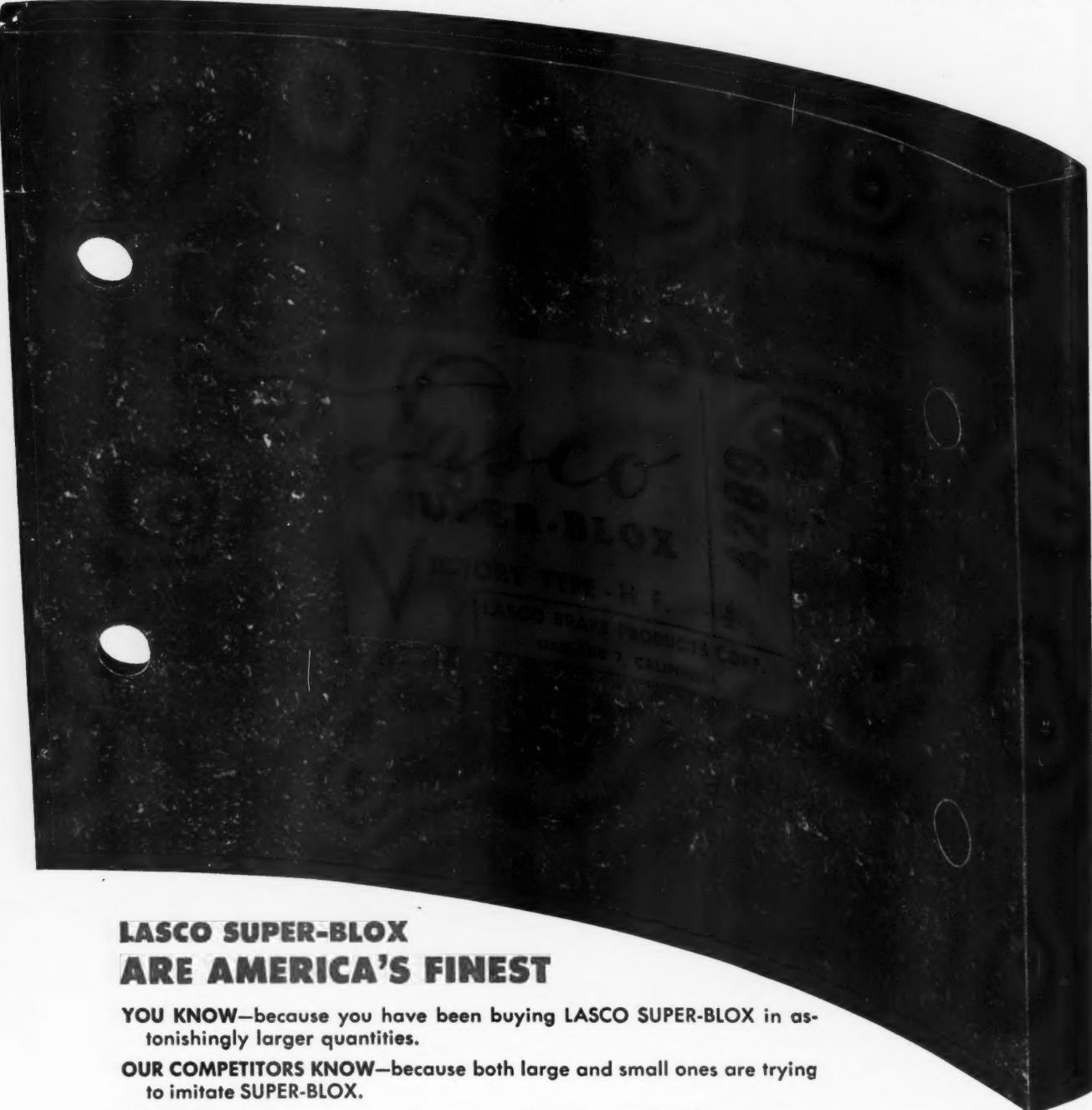
ACT TODAY . . .

Switch to Exide

WHEN IT'S AN Exide . . . YOU START

"EXIDE" Reg. T.M. U.S. Pat. Off. "ULTRA START" T.M. Reg. applied for

AMERICA'S FINEST BRAKE MATERIALS



LASCO SUPER-BLOX ARE AMERICA'S FINEST

YOU KNOW—because you have been buying LASCO SUPER-BLOX in astonishingly larger quantities.

OUR COMPETITORS KNOW—because both large and small ones are trying to imitate SUPER-BLOX.

WE KNOW—because your purchases have forced us to double our manufacturing capacity on SUPER-BLOX three different times in 6 years.

LASCO BRAKE PRODUCTS CORP., LTD.

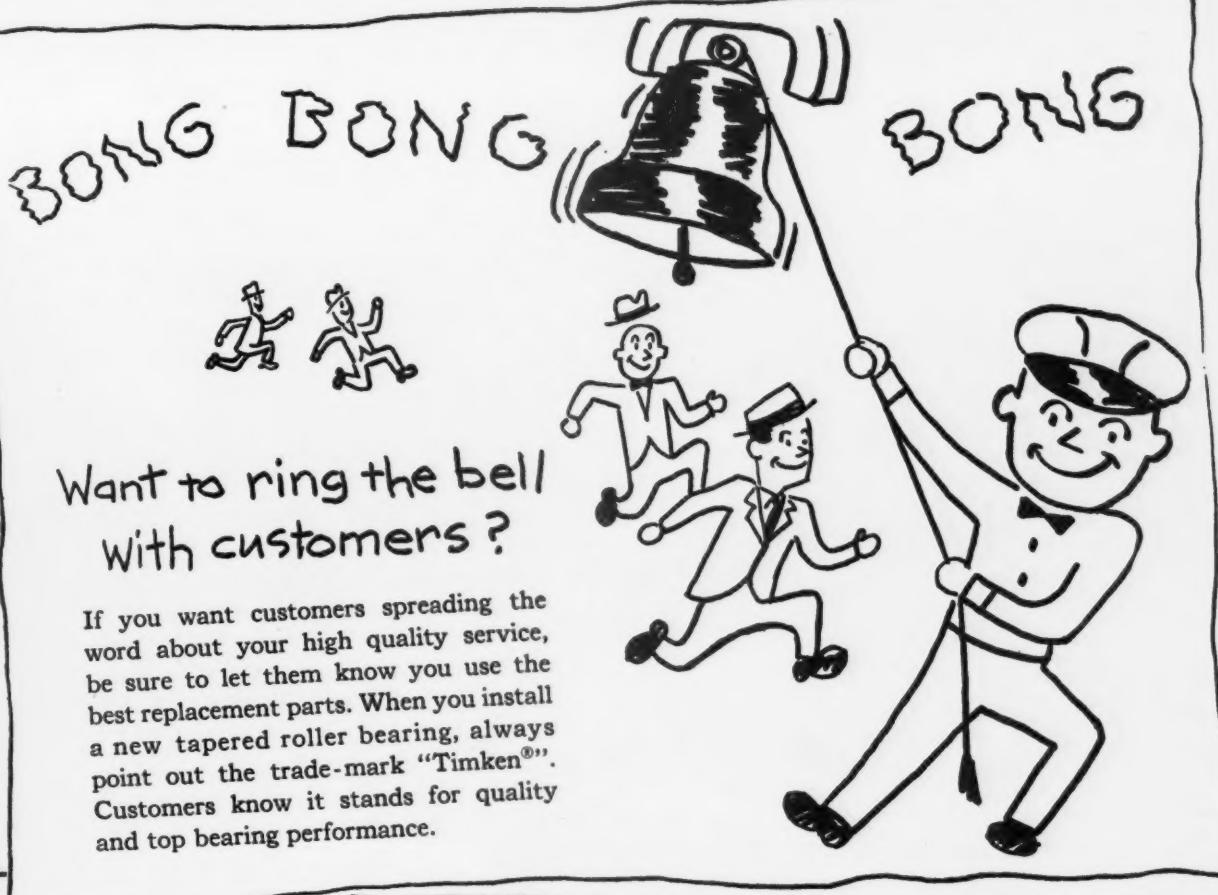


EASTERN HEADQUARTERS • 2131 LOCUST STREET • ST. LOUIS, MISSOURI
SOUTHERN HEADQUARTERS • 300 MADISON AVE. • MEMPHIS, TENNESSEE
WESTERN HEADQUARTERS • 2615 MAGNOLIA ST. • OAKLAND, CALIFORNIA
KANSAS CITY, 1620 McGEE STREET • FORT WORTH, 910 FLORENCE STREET

Los Angeles San Francisco Sacramento
Portland Seattle Spokane Salt Lake City

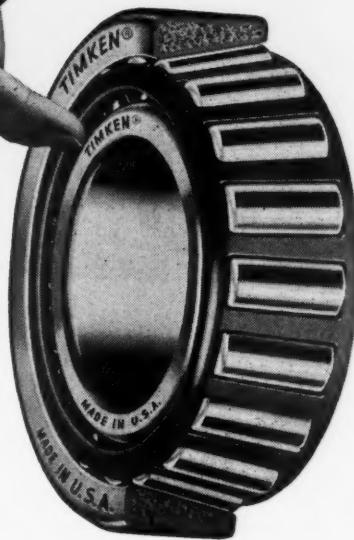
LAHER INDUSTRIES





If you want customers spreading the word about your high quality service, be sure to let them know you use the best replacement parts. When you install a new tapered roller bearing, always point out the trade-mark "Timken®". Customers know it stands for quality and top bearing performance.

Just tell 'em it's "TIMKEN®"

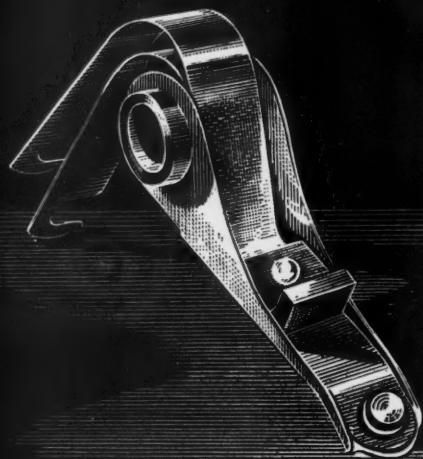


TIMKEN bearings are rated first choice for original equipment by leading car manufacturers. That's because Timken bearings have: 1) advanced design, 2) special analysis steels, 3) precision manufacture, 4) complete quality control. It will pay you to make sure all the tapered roller bearings you use for replacement are marked "Timken". **FREE BOOKLET!** Send today for "Timken Tapered Roller Bearings, Their Care and Maintenance" to Dept. AM-10, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO."

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED
ROLLER
BEARINGS

NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION





ANOTHER ONE OF BLUE STREAK'S
36,000 BOOSTERS!



Neal Franklin, ex SMU All-American football player and outstanding tune-up specialist in El Paso, thinks BLUE STREAK is "the top ignition line. When I tune-up with BLUE STREAK I know I'll get complete customer satisfaction."



*Better your business...
Buy Blue Streak*

COILS • POINTS • CONDENSERS • VOLTAGE REGULATORS • HEADLIGHT RELAYS • DISTRIBUTOR HEADS & ROTORS • DIMMER SWITCHES • WIRE & CABLE



"... over 2,000 service customers a month!"

"We have chosen complete ARO lubrication equipment because of its speed and efficiency demanded in handling over 2,000 service customers a month!"—says Charles R. Waller, President, Western Ave. Sales Inc., largest Buick dealer in Chicago and the Mid-West.

Note the combination of ARO overhead reels, wall cabinet units and portable drains . . . outstanding eye-appeal plus features to save time, improve service and increase lube profits! See your ARO Jobber.

The Aro Equipment Corporation, Bryan, Ohio.

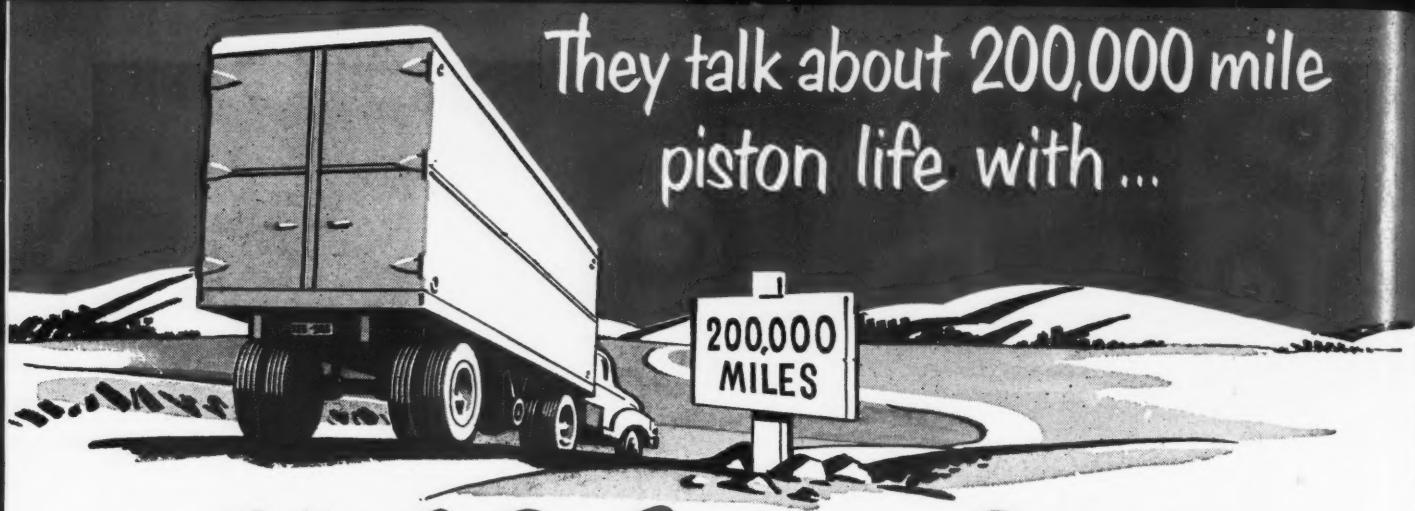
ARO Equipment of Canada, Ltd., Toronto, Ont.

ARO

The Leader!
LUBE EQUIPMENT

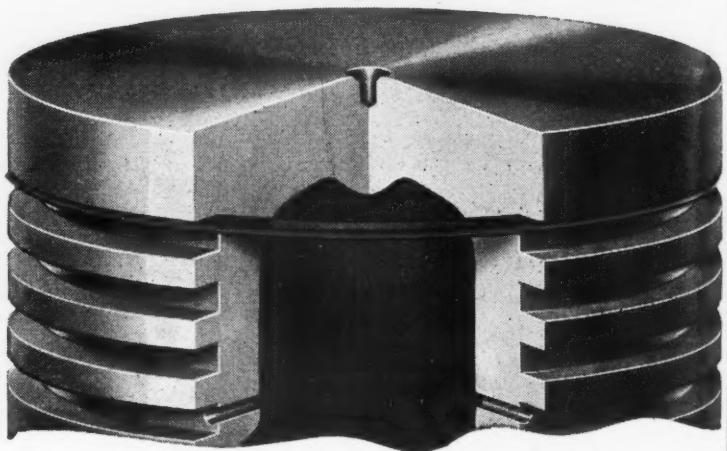
Also . . . AIR TOOLS . . . HYDRAULIC EQUIPMENT . . .
AIRCRAFT PRODUCTS . . . GREASE FITTINGS

Charles R. Waller (seated), President, and Harry Hollywood, General Manager, Western Ave. Sales Inc., Chicago.



GI-60 Groove Insert

That's right! Fleet owners report amazing results from pistons equipped with GI-60 Groove Insert, the only dependable, economical answer to top-ring groove wear. It works equally well in new or resized pistons. One operator says average piston life in his fleet has risen from 50,000 miles to better than 200,000 miles since making a standard practice of installing GI-60. Both the inserts and the tools for installation are exclusive products of Sealed Power.



Old pistons quickly restored to active duty by



Sealed Power **SUPER-SIZER**

The World's Best Piston Resizing Method!

- 1 Finished size accurately controlled by split-second timing.
- 2 Transforms surface metal of piston-pin boss areas into a forged-like structure, making expansion permanent.
- 3 Does not disrupt thrust face surfaces of pistons.
- 4 Retains original cam-ground shape of piston.
- 5 Eliminates piston slap and increases ring life.
- 6 Original close fit of piston is restored.
- 7 Black dry film lubricant provides positive initial lubrication.



Sealed Power Corporation

MUSKEGON, MICHIGAN

NEWScene

NEWS DIGEST OF THE MONTH IN PICTURES AND FACT • • OCTOBER 1952

Sports Car Lure for 1953

A field of activity that will get greater play next year is the sports car. Buick and Packard already have built and shown such cars, although neither has stated definitely that it will put them into production.

Most likely candidate to get into the field first, however, is Buick with its Skylark. Cadillac also is said to be working on some type of sports car. The biggest problem is to determine the size of the market for these expensive cars, which sell in the neighborhood of \$5000. Apparently there is no sound market data to go on, but obviously the market is a limited one.

Hudson Plan Ambitious

Hudson, with its new lightweight car in the low priced field, has ambitious plans to market about 200,000 of the cars a year. The company has been making an active drive for dealers for the past several months and would like to add 1000 new outlets to the nearly 2000 dealers it now has—a 50 per cent expansion.

The new light Hudson is an attractive car with large glass areas, good styling, and reasonable interior body room. Its wheelbase and over-all length are not the shortest in the industry, but are less than that of the Big Three volume lines with which it is supposed to com-

pete price-wise. Its performance should be exceptional with a 100 hp engine and a total over-all weight of 2800 lbs.

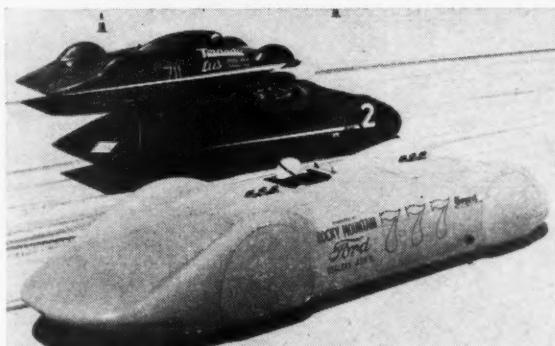
Entry of Hudson into the field will bring to four the number of independents offering such units—Nash Rambler, K-F's Henry J, the Willys Aero, and Hudson.

What About Light Cars?

Light cars already have received fairly good reception, but there is some question about the size of the market. Last year production was around 122,000, or approximately 2.27 per cent of total passenger car output. This year, while the total number is down because of production limitations, the percentage of the total will be higher, about 2.6 per cent. Even so, however, it appears that the light car market is one for the independents rather than for the Big Three volume producers.

Two-Tone Colored Tires

Colored automobile tires to match the finish of the car are a distinct possibility in the future. One of the large tire manufacturers is working on such a development. The tires would be a two-tone affair with the color in the side walls only. The tread surface would remain black.



At the 1952 Bonneville National Speed Trials at the famous salt flats, the three high-speed buggies pictured above created much interest. Nearest the camera is the sleek 777 twin engine streamliner, which Bill Kenz of Denver has piloted at 230.7 mph.



Vivacious Perdita Chandler, Hollywood actress, travels around town on her chauffeur-driven motorcycle. There may be some disagreement about the fitness of the costume for the mode of travel but the objections undoubtedly will all come from the women.



On behalf of P.A.T.A. E. J. Ronan presents awards to W. F. Hufstader, L. S. Clarke, P. G. Hoffman and E. G. Budd, Jr.

A Spectacular Dealer Celebration

Philadelphia dealers celebrated the Golden Anniversary of the founding of Philadelphia Automotive Trade Association in spectacular fashion last month.

First there was an Automotive Industries Show, displaying current models and several sports models which attracted 84,824 people to come out and see the cars.



Mid-week of the celebration 1000 dealers and guests gathered in the ballroom of the Bellevue-Stratford for a Golden Jubilee Birthday Party, presided over by President E. J. Ronan and chairman J. E. Wolfington. The Association was honored by the Chamber of Commerce of Philadelphia with a citation. J. E. Henry, president of Automobile Old Timers, also presented a citation from the Old Timers on the occasion of the association's fifty years. President Ronan presented P.A.T.A. distinguished service awards to the following men whose careers in public life and in industry have been outstanding: Edward G. Budd, Jr., president of the Budd Company; Louis S. Clarke, founder of the Autocar Company; the Honorable James H. Duff, U. S. Senator from Pennsylvania; the Honorable John S. Fine, Governor of Pennsylvania; Paul G. Hoffman, president of the Ford Foundation and former president of Studebaker; and William F. Hufstader, vice president of General Motors Corporation. Mr. Hufstader, on behalf of the Inter-Industry Highway Safety Committee, presented J. E. Wolfington with a special award, and 119 dealers were given Inter-Industry Highway Safety Driver Training Awards on behalf of the committee.

Decontrol May Come Soon

There is a report that chances are favorable for the parts industry to be decontrolled on prices before too long. Manufacturers say such a move would put them on a more practical price basis again, since under OPS regulations many items are priced unrealistically, with some too high and others too low. Decontrol will bring about a readjustment of prices on the basis of costs and competitive factors, with some items increased and others cut. General opinion is that the over-all price level would not increase drastically, however, but probably would work out at something like a 2 per cent increase.

12 Volt Ignition Problems

The change to 12-volt ignitions by three General Motors Divisions, and Chrysler on the Imperial, will represent a parts inventory problem for dealers. Although demand for 12-volt electrical parts will be only a trickle for the first several months after new models are introduced, dealers will have to be in a position to supply needs in the event of failure. Present plans call for supplying dealers with 12-volt dry-charge batteries, lamps, and ignition parts first, since new car owners undoubtedly will go to the dealer for service. Later, however, probably within a year, 12-volt parts will be supplied to the independent service trade also. Adoption of 12-volt systems by all manufacturers is expected to come in the next few years, so the outlook for the next several years will be stocks of both 6 and 12-volt parts by all service establishments.

Man With A Mission



He'll Be Seeing You "After the Show"

Uses "Care" Campaign Successfully

"This Care Will Save Your Car Campaign is a money maker for me," says Al Parsons, proprietor of Car Conditioning Co. of Philadelphia. "I've been using a great deal of the display and mailing material regularly. It's tailor-made for my business. It reminds me to remind my customers and it's the easiest stuff to use. The displays you see here are regular salesmen that greet every customer who comes into my shop."



Al Parsons and sales tools

Al Parsons is an independent operator who has latched on to a new selling tool. He first learned about it from his jobber for there has been no trade meeting in Philadelphia as yet. One is being planned, however.

New Orleans Trade Meeting

As MOTOR AGE went to press, the largest automotive trade meeting was scheduled in Detroit, Oct. 2, under the general chairmanship of G. Walter Kleinschmit of The Automobile Equipment Co., Detroit; 10,000 auto service men were expected to attend.

In New Orleans another big "Care Will Save Your Car" trade meeting is scheduled for Oct. 21 at the Municipal Auditorium there. Stanley J. Massett, president of the Associated Automotive Wholesalers of New Orleans, indicates that a crowd of 4000 to 5000 auto service men is on its way to the meeting.

1953—Competition Coming

Despite confusion arising from ill-advised pronouncements from Washington about cuts in steel allocations for the first quarter of next year, the automotive industry is looking for 1953 to be the year of competition.

DPA recently indicated that first quarter

steel allotments would be cut about 25 per cent. At the same time, NPA set first quarter production ceilings for the industry at 1.25 million cars and 315,000 trucks, the highest quarterly quota since imposition of controls. Obviously, the larger quotas could not be made under reduced steel allotments and a day or two later a corrective statement came out of Washington that enough steel would be available to build the quota allotted the industry.

There is a growing opinion that steel will be in extremely free supply by the first quarter of next year and that there is a good chance for production controls to be lifted by the end of next March. Automobile companies already are preparing for the competitive market that would result from unrestricted production. New models with fresh styling, new engines of greater horsepower, improved automatic transmissions, and optional accessories, such as power steering and air conditioning, are being prepared to lure the buyer. Sales forces are being sharpened up and sales training and promotion activities are increasing.

Pressure On Dealer Discounts

Whether prices of new models are going to be increased very much is still an open question. Costs to the manufacturer have crept upward considerably since the last price increase, but in view of the competitive market expected in 1953, mark-ups may be less than generally expected. One thing is certain, however, and that is the squeeze on dealer discounts will be heavier with overtrading and discounting necessary to move the merchandise.

Fuel Pump Developed

Electric Auto-Lite Company has developed a larger capacity fuel pump which it says practically eliminates vapor lock. The new pump has a capacity of 40 gallons an hour. Auto-Lite reports that it will be used as original equipment on several makes of cars.



In Syracuse recently seven hot rods came together a bit too violently. A lot of metal was dented but no shambles resulted. One driver was injured, but all of the others escaped without a scratch.

Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of September 25, 1952
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK					DE SOTO					HUDSON					PACKARD				
Special 40					De Luxe					Hornet 6					200				
Bus. Coupe...	1864	178	2040		Club Coupe...	2137	166	2303	3435	Club Coupe...	2485	238	2723	3550	Club Sedan, 2d...	2297	197	2494	3640
Sport Cpe., 2d...	1918	181	2098	3605	Sedan, 4d, 6p...	2149	167	2316	3540	Sedan, 4d...	2510	239	2749	3600	Tour. Sedan, 4d...	2347	201	2548	3680
Sedan, 2d...	1851	183	2134		Carry All...	2370	184	2554	3650	Hollywood...	2809	262	3071	3630	200 DeL...				
Sedan, Del., 2d...	1994	187	2181	3620	Sedan, 4d, 8p...	2896	224	3120	4035	Conv. Brghm...	3038	280	3318	3750	Club Sedan, 4d...	2433	208	2641	3660
Sedan, 4d...	2005	188	2193		Custom...					Commodore 8...					Tour. Sedan, 4d...	2484	211	2695	3585
Sedan, Del., 4d...	2048	191	2239	3665	Club Coupe...	2333	181	2514	3565	Club Coupe...	2485	238	2723	3580					
Rivra. Cpe., 2d...	2086	193	2279	3665	Sedan, 4d, 6p...	2352	183	2535	3660	Sedan, 4d...	2510	239	2749	3630					
Conv. Cpe., 2d...	2399	216	2615	3850	Sportsman...	2664	206	2870	3720	Hollywood...	2809	262	3071	3660	200 DeL...				
Super 50					Conv. Coupe...	2761	215	2976	3865	Conv. Brghm...	3038	280	3318	3750	Club Sedan, 4d...	2433	211	2641	3660
Rivra. Cpe., 2d...	2244	216	2460	3775	Stat. Wagon...	2940	228	3168	4020										
Sed. Rivra., 4d...	2323	222	2545	3825	Sedan, 4d, 8p...	3089	240	3339	4155										
Conv. Cpe., 2d...	2805	243	2848	3970	Suburban...	3442	266	3708	4370										
Est. Wagon, 4d...	3000	272	3272	4105	Fire Dom. 8...														
R'Dmaster, 70					Club Coupe...	25-5	195	2700	3675										
Rivra. Sed., 4d...	2899	279	3178	4285	Sedan, 4d, 6p...	2525	196	2721	3760										
Rivra. Cpe., 2d...	2995	287	3282	4235	Sportsman...	2837	220	3057	3850										
Conv. Cpe., 2d...	3130	298	3428	4395	Conv. Coupe...	2934	227	3161	3950										
Est. Wagon, 4d...	3616	333	3949	4505	Stat. Wagon...	3113	241	3354	4080										
					Sedan 8p...				4325										
CADILLAC					DODGE					KAISER VIRGINIAN					PLYMOUTH				
Series 62					Wayfarer...					De Luxe...					Concord...				
Spt. Coupe...	3268				Coupe, 3p...	1749	138	1885	3050	Bus. Coupe...	2099				Coupe, 3p...	1490	120	1610	2893
Tour. Sedan...	3354				Sedan, 2d...	1887	147	2034	3140	Club Coupe...	2252				Sedan, 2d...	1623	131	1754	2969
Cpe. de Ville...	3658				Meadowbrk...					Sedan, 2d...	2273				Suburban...	2002	161	2163	3145
Conv. Cpe...	3796				Sedan, 4d...	2008	156	2164	3355	Traveler, 2d...	2372				Savoy...	2117	170	2287	3165
Series 60					Coronet...					Traveler, 4d...	2420				Cambridge...				
Tour. Sedan...	3934				Club Coupe...	2078	162	2240	3290	Bus. Coupe...	2273				Club Coupe...	1651	133	1784	3030
Series 75					Sedan, 4d...	2094	163	2257	3385	Sedan, 2d...	2381				Sedan, 4d...	1686	136	1822	3068
Tour. Sedan...	3941				Diplomat...	2415	187	2602	3475	Club Coupe...	2400				Cranbrook...				
Imp. Sedan...	5139				Conv. Coupe...	2504	194	2698	3520	Sedan, 4d...	2430				Club Coupe...	1744	139	1883	3046
					Sierra...	2699	209	2908	3735	Traveler, 2d...	2479				Sedan, 4d...	1773	141	1914	3088
					Sedan, 4d, 8p...	2844	220	3064		Traveler, 4d...	2528				Belvedere...	2053	163	2216	3105
														Conv. Cpe...	2158	171	2329	3266	
CHEVROLET					FORD					MERCURY					PONTIAC				
Styl. Spec. KJ					Mainline 6...					Customline...					Chieftain 6...				
Bus. Coupe, 2d...	1390	129	1519	3045	Bus. Coupe...	1389				Customline...	1987				Sedan, 2d...	1788	168	1956	3253
Sedan, 2d...	1469	134	1603	3085	Tudor...	1603				Customline...	2087				Sedan, 4d...	1843	172	2015	3278
Sport Coupe...	1474	135	1609	3050	Fordor...	1485				Customline...	3070				Del. Sed., 2d...	1885	175	2060	3253
Sedan, 4d...	1519	140	1659	3115	Ranch Wagon...	1832				Customline...	3173				Del. Sed., 4d...	1940	179	2110	3278
Styl. Del. KK					Customline...					Customline...	3377				Del. Catalina...	2112	192	2304	3358
Sedan 2d...	1553	143	1696	3110	Tudor...	1607				Customline...	3377				Sup. Del. Cata...	2174	196	2370	3368
Sport Coupe...	1570	145	1715	3100	Fordor...	1615				Customline...	3377				Del. Conv. Cpe...	2242	202	2444	3478
Sedan 4d...	1603	146	1749	3145	Ranch Wagon...	1832				Customline...	3377				Stat. Wagon...	2401	214	2615	3593
Bel Air Coupe...	1827	165	1992	3215	Customline...	2060				Customline...	3377				Chieftain 8...	2479	220	2699	3528
Conv. Coupe...	1939	174	2113	3380	Tudor...	1607				Customline...	3377				Chieftain 8...	1858	173	2031	3333
Sta. Wagon...	2096	185	2281	3475	Fordor...	1615				Customline...	3377				Sedan, 4d...	1913	177	2090	3378
Fltn. Del. KK					Ranch Wagon...	1832				Customline...	3377				Del. Sed., 2d...	1955	181	2136	3333
Sedan 2d...	1553	143	1696	3110	Customline...	1640				Customline...	3377				Del. Sed., 4d...	2010	184	2194	3378
					Tudor...	1640				Customline...	3377				Monterey...	2182	198	2360	3443
					Fordor...	1685				Customline...	3377				Sup. Del. Cata...	2244	202	2446	3448
					Ranch Wagon...	1902				Customline...	3377				Del. Conv. Cpe...	2312	216	2518	3568
					Customline...	1640				Customline...	3377				Stat. Wagon...	2470	219	2689	3688
					Tudor...	1640				Customline...	3377				Del. Sta. Wgn...	2548	224	2772	3633
CHRYSLER					Customline...	1640									STUDEBAKER				
Windsor 6					Tudor...	1640									Champ. Cust...				
Club Coupe...	2298	178	2476	3550	Fordor...	1685									Sedan, 2d, 6p...	1574	150	1724	2655
Sedan, 4d, 8p...	2319	179	2498	3640	Ranch Wagon...	1832									Coupe, 5p...	1600	152	1752	2660
Twn. and Cty...	2972	228	3200	4015	Country Sed...	2060									Sedan, 4d, 6p...	1606	151	1757	2695
Sedan, 4d, 8p...	3104	238	3342	4145	Crestline 8...	2060									Champ. Del...	1661	155	1816	2685
Wind. Del. 6...					Victoria...	1925									Coupe, 5p...	1687	156	1843	2675
Sedan, 4d...	2532	195	2727	3775	Country Sq...	2186									Sedan, 4d...	1692	157	1849	2720
Newport...	2867	220	3087	3855	HENRY J										Champ. Regal...	1739	161	1900	2690
Conv. Coupe...	2881	229	3210	3990	Vagabond...	1293									Coupe, 5p...	1765	163	1928	2695
Saratoga 8					Sedan, 4cyl...	1428									Sedan, 4d...	1770	163	1933	2725
Club Coupe...	2960	228	3188	3935	Corsair...	1366									Starliner...	2038	182	2220	2660
Sedan, 4d, 6p...	2966	229	3215	4010	Sedan, 4cyl...	1507									Soft Conv. Commander...	2071	186	2257	2707
Twn. and Cty...	3646	278	3294	4345	Sedan, 4cyl...	1521									Regal...	1739	161	1900	2690
Sedan, 4d, 6p...	3876	296	4172	4510	Sedan, 4cyl...	1521									Coupe, 5p...	1765	163	1928	2695
New Yorker 8					Sedan, 4cyl...	1521									Sedan, 4d...	1770	163	1933	2725
Sedan, 4d, 6p...	3279	251	3530	4205	Sedan, 4cyl...	1521									Starliner...	2038	182	2220	2660
Newport...	3687	282	3696	4325	Sedan, 4cyl...	1521									Soft Conv. Commander...	2071	186	2257	2707
Conv. Coupe...	3802	291	4093	4450	Sedan, 4cyl...	1521									Regal...	1739	161	1900	2690
Imperial 8					Wasp...	2186	210	2396	3470						Coupe, 5p...	1801	166	2187	3030
Club Coupe...	3555	272	3827	4220	Sedan, 4d...	2234	214	2448	3485						Sedan, 4d...	1806	166	2187	3030
Sedan, 4d, 6p																			

1952 New Passenger Car Registrations by Makes by States*

STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	Crosley	De Soto	Dodge	Ford	Henry J	Hudson	Kaiser	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others	Total
Alabama	July 210	64	614	103	3	52	208	480	48	68	33	31	157	120	143	82	463	192	125	103	10	3,306
	7 Mos. 1909	394	6787	664	15	394	1505	5045	384	463	213	209	1181	751	1300	438	3359	1777	1161	410	49	26,408
Arizona	July 150	23	288	42	1	52	68	185	37	29	19	25	99	57	62	29	156	96	82	19	21	1,538
	7 Mos. 982	187	2118	304	20	237	532	1767	213	250	90	87	668	288	561	212	975	703	646	112	131	11,081
Arkansas	July 193	47	544	63	2	68	211	436	36	38	24	7	117	91	124	38	409	185	109	44	2	2,766
California	July 1174	252	3981	360	18	356	1148	3218	216	205	152	77	723	525	789	196	2392	1167	758	187	23	17,917
	7 Mos. 1467	949	3097	917	9	673	1499	2692	157	828	509	285	1280	1305	1130	502	2691	1126	1199	381	1058	23,731
	7 Mos. 13182	5581	36748	6863	58	5267	11028	29513	917	4770	2089	1553	10890	7998	10513	3428	21806	11980	9887	2024	5911	201,794
Colorado	July 201	53	404	110	3	55	172	358	9	81	16	28	118	101	163	45	282	161	79	50	18	2,505
	7 Mos. 1838	401	3737	724	35	383	1056	3446	69	590	102	178	950	682	1123	282	2221	1236	758	264	91	20,172
Connecticut	July 306	131	636	165	6	140	401	511	44	140	68	54	207	239	285	118	577	305	166	103	92	4,674
	7 Mos. 2544	859	6493	1204	32	870	2837	5360	504	896	501	287	1588	1414	2222	820	3866	2300	1547	499	521	37,174
Delaware	July 81	22	394	27	3	13	58	131	4	22	15	5	38	25	63	8	103	68	31	8	3	1,120
	7 Mos. 578	150	1758	163	14	107	431	1313	71	137	79	39	273	207	437	88	691	413	459	38	35	7,479
District of Col.	July 113	54	367	62	1	34	130	239	10	39	8	14	41	48	105	57	325	94	45	31	23	1,840
	7 Mos. 769	309	2700	397	4	218	906	1747	123	226	59	75	347	278	702	261	2588	809	359	95	97	13,067
Florida	July 490	168	1264	173	35	114	412	821	92	84	38	68	300	281	308	157	694	300	192	152	101	6,244
	7 Mos. 3874	1085	9092	1335	217	781	3115	7783	758	651	340	450	2241	1682	2292	902	5005	2893	1777	701	897	46,931
Georgia	July 407	117	991	122	2	79	357	789	36	87	42	39	257	124	260	89	611	375	184	83	16	5,067
	7 Mos. 3610	747	10437	1032	36	617	2745	8180	540	545	317	264	2074	939	2341	623	4846	3290	1882	406	154	45,805
Idaho	July 131	29	360	58	40	114	213	8	61	13	15	87	70	103	32	190	118	88	50	11	1,797	
	7 Mos. 971	192	2198	294	220	598	1654	64	385	150	72	612	447	596	211	1045	640	680	224	46	11,279	
Illinois	July 1857	643	4572	837	21	593	2146	3071	114	690	254	208	1127	1162	1241	449	3350	1508	788	147	51	24,827
	7 Mos. 14676	4007	33721	6396	147	4337	12204	27177	825	4818	1533	1087	7656	7749	9255	2847	22165	10495	6684	821	808	178,412
Indiana	July 730	198	1990	316	7	265	72	1381	82	262	152	101	430	428	478	186	1274	682	524	132	26	10,366
	7 Mos. 5262	1227	15768	2092	60	1718	4350	11919	610	1568	816	447	2641	2720	3718	1124	8390	4721	5009	597	91	74,848
Iowa	July 438	106	1020	177	2	132	408	777	22	81	58	40	244	238	246	102	699	399	169	48	8	5,412
	7 Mos. 3067	702	10048	1231	10	830	2621	7935	187	483	361	227	1880	1477	2169	552	5015	2842	1825	251	32	43,525
Kansas	July 453	105	1216	217	110	451	990	48	183	99	45	352	288	356	129	765	457	207	58	8	6,503	
	7 Mos. 2873	538	7945	1032	24	676	2311	6521	357	1005	484	208	1654	1646	1896	566	4055	2278	1461	234	27	37,881
Kentucky	July 228	56	602	99	5	60	260	472	23	78	22	20	144	145	150	78	390	215	111	49	8	3,211
	7 Mos. 2024	403	6672	777	25	434	1974	5214	217	470	181	99	1056	1198	1471	438	3226	1810	1326	301	55	29,372
Louisiana	July 264	71	856	113	4	119	239	654	33	43	41	28	154	142	184	104	528	255	144	59	8	4,043
	7 Mos. 1912	418	7111	792	38	653	1737	5387	294	269	289	171	1100	912	1432	593	3624	2108	1515	270	74	30,695
Maine	July 83	26	259	41	2	46	90	160	27	44	15	6	45	61	64	15	168	82	40	28	11	1,313
	7 Mos. 688	162	2284	277	16	257	647	1628	201	239	131	77	394	362	605	122	720	385	158	54	10,572	
Maryland	July 294	78	812	136	2	116	421	700	118	171	57	40	146	253	195	133	699	271	172	76	36	4,926
	7 Mos. 2349	530	8481	1088	19	856	2491	6389	738	1023	388	219	1493	1471	1834	719	4813	2279	1481	339	159	34,407
Massachusetts	July 529	170	1153	275	18	274	734	891	80	212	79	87	298	511	415	159	1242	508	330	115	137	8,217
	7 Mos. 4679	270	4691	533	15	292	997	3484	232	209	147	106	838	499	889	296	2388	1249	931	19	19,867	
Michigan	July 1630	636	4505	479	8	427	1063	3182	85	366	229	208	732	785	996	327	1975	1498	435	151	43	19,780
	7 Mos. 13825	4618	37734	3630	61	2976	8746	33075	987	2659	1654	1200	6730	5364	9193	2335	15941	12844	4474	829	205	188,870
Minnesota	July 538	117	1188	195	170	266	1228	28	112	87	30	374	199	358	146	847	439	239	28	15	6,898	
	7 Mos. 4209	865	12765	1767	8	1329	3187	9845	271	742	542	199	2148	1574	2973	959	6754	3488	2680	267	75	58,645
Mississippi	July 194	55	487	87	1	40	137	371	28	32	24	17	138	65	99	46	332	159	98	41	3	2,450
	7 Mos. 1572	308	4691	533	15	292	997	3484	232	209	147	106	838	499	889	296	2388	1249	931	19	19,867	
Missouri	July 512	122	1753	238	7	193	504	1377	63	100	59	44	397	414	408	132	1070	513	238	73	8,229	
	7 Mos. 4189	916	14072	1561	40	1374	3309	11168	395	734	376	270	2476	2794	729	91	7532	3452	2012	333	77	60,760
Montana	July 148	40	404	61	40	104	256	111	60	22	17	91	55	124	36	212	99	80	38	3	1,901	
	7 Mos. 911	226	2470	328	4	219	621	1919	60	341	98	68	259	539	258	699	157	1149	614	548	193	10,140
Nebraska	July 217	49	526	110	1	53	166	446	6	68	17	18	159	106	134	48	391	224	101	21	2,863	
	7 Mos. 2098	435	5062	797	15	395	1227	5099	98	344	178	149	1089	705	1219	301	2750	1726	1021	191	14,893	
Nevada	July 37	17	81	20	8	24	44	1	9	3	8	19	11	28	6	82	28	24	10	2	440	
	7 Mos. 244	94	633	146	6	68	216	388	7	70	10	26	183	36	182	91	352	178	30	9	779	
New Hampshire	July 59	16	138	18	1	21	61	79	10	31	10	5	25	41	44	17	83	58	25	20	3,205	
	7 Mos. 709	598	1187	223	12	158	558	1261	137	237	166	87	290	404	472	142	907	672	391	175	113	8,981
New Jersey	July 965	409	2027	519	8	363	1127	1732	117	385	191	113	545	570	653	412	1551	968	478	247	161	13,541
	7 Mos. 6750	2160	16769	3173	76	2272	6277	13690	932	2248	1053	599	4097	2867	4888	19351	6457	3680	1017	783	91,327	



Good Overhead Control Determines Business Profits

**All overhead expense should be prorated monthly so that each month
is charged with its proper share of expenses contracted annually**

TO make maximum profits on automotive service and repairs, you must earn a satisfactory return on every job done in your shop. To do this, you must know your costs on each job. Labor, materials and overhead are the three main elements of cost. You charge up the cost of materials to each job from your suppliers' invoices. You charge up the time from the payroll records. So far, it is easy figuring.

Overhead Expense

Overhead expense is a little more difficult. You cannot figure this the same way you figure labor and materials because you do not pay these expenses according to the job. They have no direct connection with job work and are recorded on the financial accounts as the bills are received by you, or you pay them. The outlay for burden is figured on a monthly basis because this is the most practical way to figure it on the financial accounts. On the other hand, the service and repair jobs that come in are not handled on a monthly basis, some take a few hours, others a day or two or longer. The financial accounting

and cost accounting for overhead expense follow two different patterns and it is this variance that gives the automotive businessman so many overhead-aches. How much rent, insurance, office expenses, etc., should he charge to each job?

Many operators distribute overhead expense to a job on a percentage basis. There is a flaw in this reckoning. If the sales volume for the current month is lower than the volume done in the period from which the percentage was taken, the overhead charged to each job will be too low and the operator will lose money on all the work done during the current period. Sales volume does fluctuate from month to month, consequently, the operator has this hazard to cope with all the time. For this reason, *time* is a better basis upon which to distribute overhead expense to service and repair jobs. Unlike the percentage method of allocation, which changes with the volume done, time never changes. There are always 60 minutes in an hour, so the operator who bases the overhead charge on the time spent doing a job is more likely to charge up enough

(Continued on page 64)

Chilton's **MOTOR AGE**

An EDITORIAL

That's What the Man Said

IN these times, above and beyond partisan politics, we harken back to the words of Abraham Lincoln who pointed out that **YOU**, personally and individually, are the American Government. Spoke the newly elected president on Feb. 11, 1861:

"In ALL trying positions in which I shall be placed, and doubtless I shall be placed in many such, my reliance will be upon you and the people of the United States; and I wish you to remember, now and forever, that it is your business, and not mine; that if the union of these States and the liberties of this people shall be lost, it is but little to any one man of fifty-two years of age, but a great deal to the thirty millions of people who inhabit these United States, and to their posterity in all coming time. It is your business to rise up and preserve the Union and liberty for yourselves, and not for me. I appeal to you again to constantly bear in mind that not with politicians, not with Presidents, not with office-seekers, but with you, is the question: Shall the Union and shall the liberties of this country be preserved to the latest generations?"

Automobile dealers are in the enviable position of being able to supply mass



transportation to voters in the various states where such is legal. Let's support N.A.D.A.'s non-partisan campaign to Get Out The Vote. "It is your business to rise up and preserve the Union and liberty for yourselves . . ." That's what the man said.

Frank P. Tigher

EDITOR

MANY factors affect the front end geometry and wheel alignment of an automobile and each one of these should be studied before actually doing any work on the car. First of all, the frame must be in correct alignment. To align the front and rear wheels properly, the top and bottom surfaces of the front cross member must be parallel fore and aft, and the bolts of the front shock absorbers and the lower control arms must be of the correct size and in their proper locations. Wheel and tire balance should also be perfect as it has an important effect on steering and tire wear. If the wheels and tires are out-of-balance, shimmy or tramp may develop or tires may wear unevenly and give the erroneous impression that the wheels are not in proper alignment. Therefore, the wheels should be balanced before assuming that the front end is out of line. The major factors to consider in correct alignment of the front and rear wheels are: front wheel caster, camber, king pin inclination, toe-in and turning angles.

Caster is the fore and aft angle or tilt of the king pin with reference to a line at right angles to the road. When the top end of the king pin tilts rearward, the caster is positive. When the top end of the king pin tilts forward, the caster is negative. Camber is the outward or inward angle or tilt of the wheels with reference to a line at right angles to the road. When the top of the wheel tilts outward, the camber is positive. When the top of the wheel tilts inward, the camber is negative or reverse.

King pin inclination is the inward angle or the tilt of the king pin toward center line of the car with reference to a line at right angles to the road. Toe-in is the setting of the front wheels so that the distance between them is less at the front than at the rear, when wheels are in the straight ahead position. Steering geometry is the front wheels in proper relation to each other in making right or left turns. As the wheels are turned sideways the inside wheel must turn to a greater angle than the outside wheel in order to compensate for the difference in the turning radius of these two wheels. This is necessary to avoid side scuffing of front tires on the turn.

Front Wheel Alignment Procedures

Close limits on caster, front wheel camber and king pin inclination are beneficial to easy steering, but require only reasonable accuracy to provide normal tire life. In any type of front suspension, the toe-in adjustment is much more important than caster and camber so far as tire

by Jack Montgomery

Technical Editor

Important

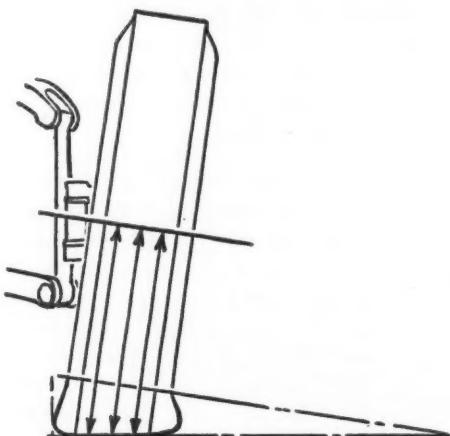


Fig. 1. Cambered wheel tends to roll in the direction of its camber by the contact of the tire on the road.

wear is concerned. Caster and camber adjustments need not be considered unless visual inspection shows these settings to be out and unless the car gives poor handling on the road.

The use of an accurate front end alignment machine is essential to determine whether front suspension parts have been damaged by shock or accident and to obtain correct alignment settings. Before any attempt is made to check or make any adjustments affecting caster, camber, toe-in and king pin inclination, or steering geometry, the following inspection should be made to be sure of correct alignment of equipment readings and alignment adjustments.

Steering complaints and rapid tire wear are generally caused by misalignment due to parts being bent, worn or out of adjustment

Factors in Wheel Alignment

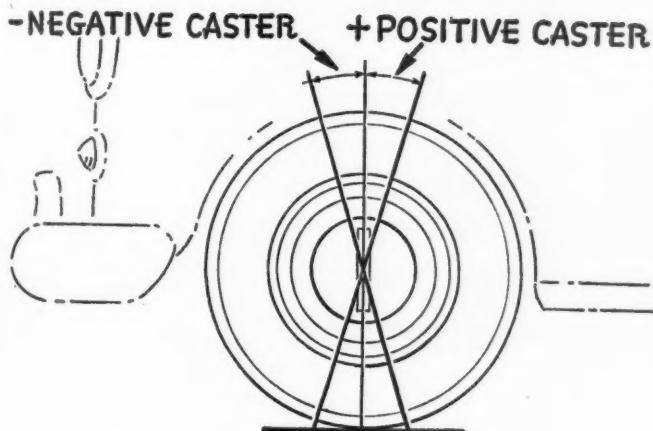


Fig. 2. View of spindle and wheel showing direction of positive and negative caster.

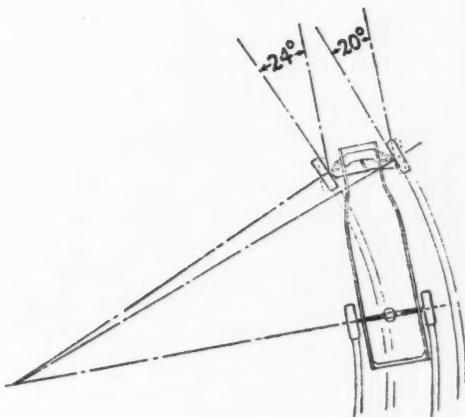


Fig. 3. How turning radius is measured. Note inside wheel turns further than outside.

The front tires should have approximately the same amount of wear and all tires should be inflated to the specified pressures. Wheel bearings should be checked for looseness and adjusted if necessary. Run-out of the wheels and tires should be correct up to a limit of $\frac{1}{8}$ inch run-out at side of tires. Wheels and tires should also be in balance. King pins should be checked for looseness and so should the tie rod ends. If play is excessive, they must be corrected before alignment readings will have any value. Shock absorbers should be checked. The car must be on a level surface and at curb height—no passengers, no load in car, spare tires in place and

full of water, oil and gasoline. Bounce car at front and rear end several times to allow frame to come to its normal level. Check spring dimensions and make any correction indicated.

Since caster and camber are both adjusted on most cars by turning the eccentric upper knuckle support pivot pin, both of these settings must be checked before changing either. Caster and camber should be within specified limits. Note that the caster angles at both front wheels need not be exactly the same but must be within $\frac{1}{2}$ degree of each other. Likewise the camber angles on both sides must be within $\frac{3}{4}$ degree

(Continued on page 66)



"Look, Chief," said Tommy. "A peace offering!"

Pop Stops a Runaway

TOMMY WINTER stood with the receiver tightly clenched in his left hand. He listened intently, and as he listened a deep furrow creased his forehead. At last he cleared his throat.

"Well I don't know what I can do Mrs. Parsons," he said, "but I'll certainly be glad to come over and try. Yes right away." He hung up the receiver and turned toward Pop O'Neill. Mrs. Parsons just called. No brakes on her car ap-

parently. Said the pedal is completely soft but it was all right when she started to drive her husband to work this morning. Wheel cylinder or master cylinder I guess. I'll go pick up her car."

"I'm pretty well caught up right now, Tommy," said Pop. "Suppose I get it? Save you making the trip."

"Well," Tommy cast a dubious glance at Pop. "I think I'd better go," he said at last.



Pop O'Neill



by Charles M. Kenyon, Managing Editor

"All right," Pop agreed. "If you don't think I can handle it, go ahead."

Tommy took the boss's kidding seriously. "No it isn't that, Pop," he said. "It's well . . . Mrs. Parsons has another job she wants me to do too. Young Pete has moved out into his tepee in the back yard and won't come into the house. She thinks that well . . . you know I used to be on the high school football team . . . well he thought that I was quite a . . . well he liked me a bit and

Tommy did a fine job of bringing the customer's boy under control, but no psychological treatment could fix her car. It took Pop to find the trouble

. . . well she thought maybe if I spoke to him he'd listen to reason."

Pop ran his own hand over his glistening crown then slapped his ample paunch. "All right," he laughed. "I can hardly pinch hit as a football hero these days, but you can bring the car back all right."

When Tommy reached the Parsons' home, Mrs. Parsons beckoned him into the kitchen.

"Tommy," she said. "We can't do a thing with him. You know how all children seem to have gone crazy over Hop-a-Long Cassidy these days. But not our Pete! He now insists we address him as 'Pinto,' but he caught the steer by the tail instead of the horns apparently. He began by feeling sorry for the poor Indians. Then he began to think that Indians were better riders than cowboys. Then he reached the point where cowboys were no good at all and all Indians became supermen. He even holds it against his father and me that he doesn't have a good red skin himself. Matters reached a pretty pass this morning when a birthday present came from his grandmother. It's these cowboy's guns. Aren't they beauties?" She held them up toward Tommy and he took them in both hands.

"They certainly are," he said. "If I were a boy that would be one of the best presents I could think of getting."

"Me too," agreed Mrs. Parsons. "But not Pinto. He is highly insulted. They are White Man's magic and bad medicine and he wants nothing to do with them. I'm afraid I lost my temper and we got into a bit of an argument about it. Finally he packed up his favorite belongings and moved out into the tepee. He insists that he's never coming back into the house. He's been out there now for three hours. Hasn't eaten his breakfast. Didn't see his father off to work. Hasn't done a thing except sit there cross-legged. His grandmother would be terribly hurt if he doesn't acknowledge the birthday present."

Tommy shot her a quizzical look. But he could tell by the worry in Mrs. Parsons' eyes that she

(Continued on page 68)

How Auto-Lite Fuel Gages Operate

**Understanding the fundamentals of
operation of these two gages will
be helpful in servicing all makes
of gages on all current model cars**

by John K. Montgomery
Technical Editor

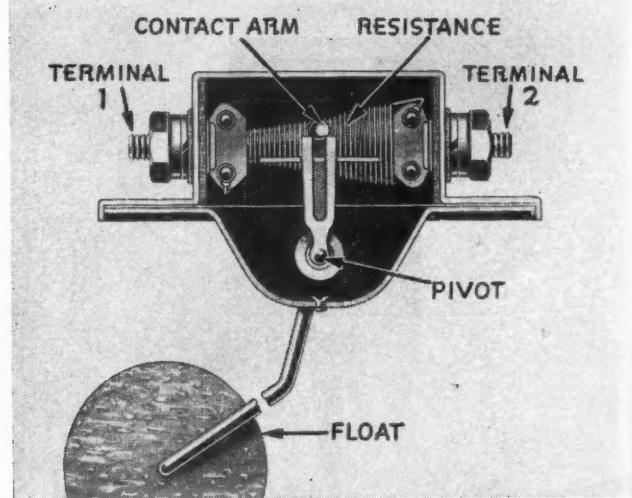


Fig. 1. The two-terminal fuel gage used with a thermal type dash unit. The float moves the contact arm.

Fig. 3. Phantom view showing the construction of a dash mounted thermal type fuel gage.

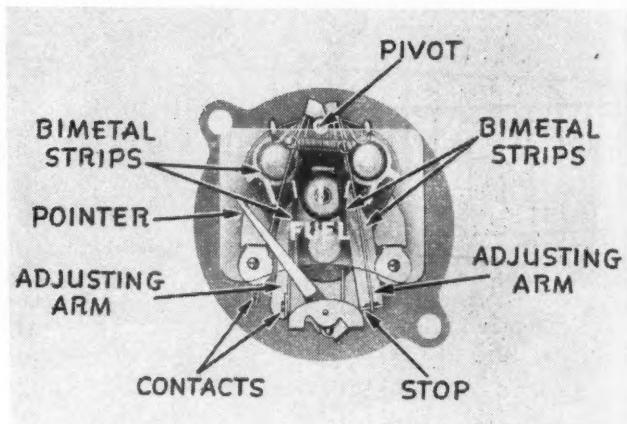
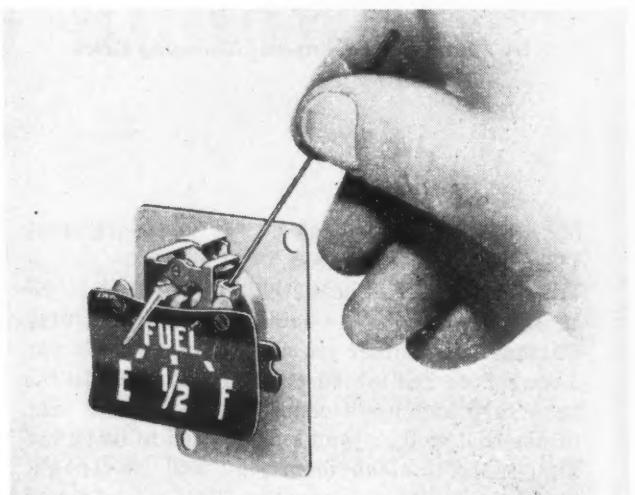


Fig. 5. Adjusting the magnetic fuel gage dash unit.



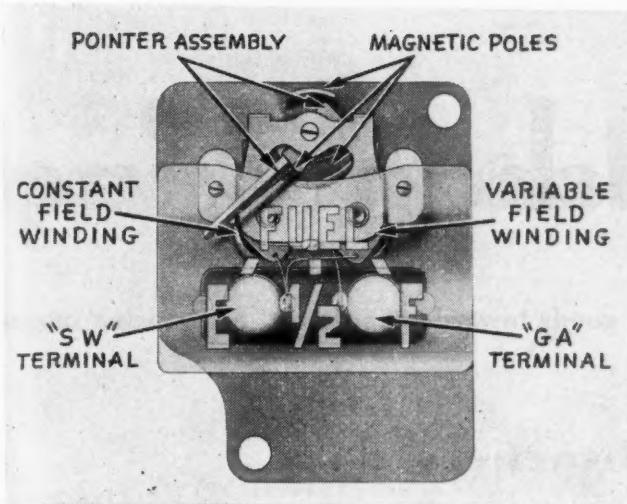


Fig. 2. Phantom view showing the internal parts layout of a dash mounted magnetic type fuel gage.

Fig. 4. The magnetic fuel gage tank and dash units. Resistance controls magnetism in the dash unit.

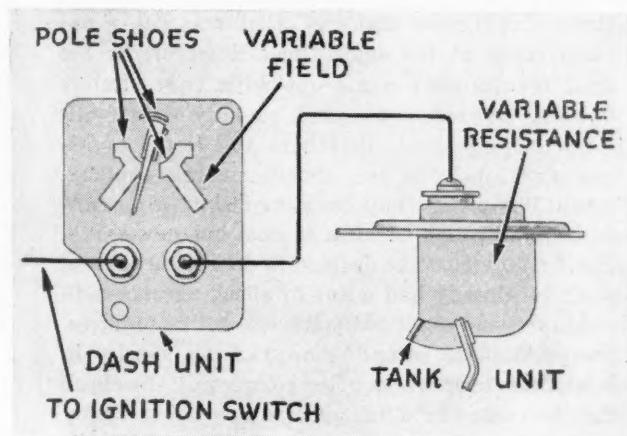
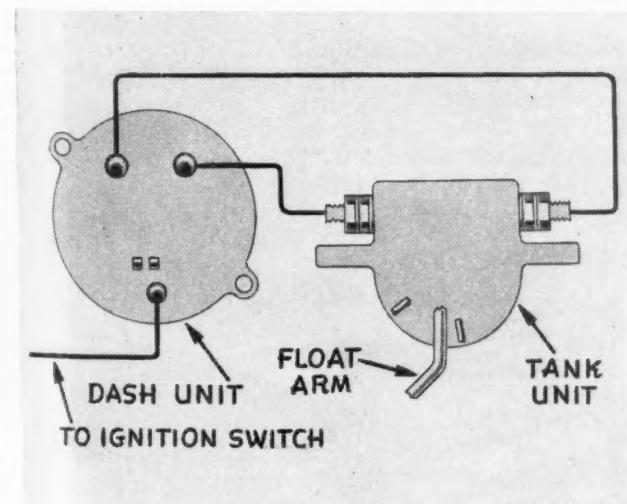


Fig. 6. Wiring diagram of thermal gage circuit.



THE tank unit consists of a resistance with a sliding contact which is actuated by a float. This resistance is connected to the dash unit and varies the current in the dash unit windings to give the meter indications. Tank units may have one or two terminals and have different circuits and characteristics that are designed for use with a particular dash unit and tank shape or size.

The tank unit must be grounded to complete the circuit and for ungrounded or two wire systems, a lead must be installed from the tank unit case to the dash unit frame. Usually terminals are provided for this ground circuit when the units are designed for a two wire system. The length of the float arm and the angle of movement are designed for certain sizes of tanks while the form of the insulating block, on which the resistor is wound, depends upon the shape of the tank. The angle of float movement is not always proportionate to the amount of fuel in the tank and the resistor shape is designed to offset the variations to give a definite change in resistance for each like change in fuel amount.

Two types of dash units have been designed. There is a magnetic type dash unit which is illustrated in Fig. 2 and the thermal type which is illustrated in Fig. 3.

The magnetic type has three poles, two of which have windings. One of these windings is connected to the ignition switch and ground and creates a steady magnetic pull towards the "empty" position, whenever the ignition switch is turned on. The other winding is connected to the ignition switch, but it is grounded by the tank unit. It creates a magnetic pull toward the "full" position, the strength of which is dependent upon the amount of resistance inserted in the circuit by the tank unit.

With the float in the "empty" position, resistance is inserted in the variable field circuit; while with the float in the "full" position, most of the resistance is grounded out. The pointer is mounted on a magnetic vane which is attracted by the two lower magnetic poles and assumes a position between them depending upon the combined magnetic field. A counter weight is mounted on the pointer assembly to bring the reading back to "empty" position whenever the ignition is turned off.

If the gage does not give an accurate indication of the amount of fuel in the tank, check to locate the trouble as follows:

Disconnect the lead from the "GA" terminal on back of the dash unit. Turn on the ignition and the pointer should stay against the left stop pin. Ground the "GA" terminal and the pointer should move to the right stop pin. Check the

(Continued on page 86)

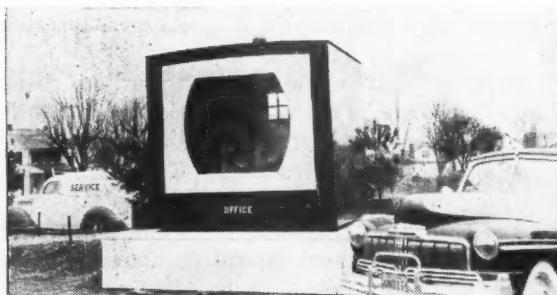
Merchandising

Merchandising moves goods towards people . . . Advertising moves

1 Out of 4 Need Shock Absorbers . . .



It pays to look . . .



Above: When Jim Myers of Bareville, Pa., decided to open a Used Car Lot recently, he hunted for the "something different" angle to catch attention of passing motorists. Result is this replica of a table-model television set which Jim uses as his office. One of the two service trucks—another extra feature—is shown in background.

Right, Service customers at Rohrer Chevrolet, Camden, N. J., can enjoy a hamburger and coffee while waiting for repairs to be made. This snack bar is located right on the shop floor, and has been a convenience for both customer and employee.

To prove that the old "seek and ye shall find" proverb applies to automotive service as in so many other phases of life, Motor Age editors conducted an editorial investigation in two service shops. We were seeking worn or leaking shock absorbers—and we found 'em. Neither of these shops knew that the other was doing the same thing at the same time. However, in the final results they came out with very similar figures. One shop checked seventy cars with direct acting shock absorbers and found eighteen with at least one shock needing replacement. The other shop examined sixty-nine cars and found fifteen needing at least one new shock. The first shop owner decided to do a little selling, since he already had a line of shock absorbers in stock. He sold eight complete sets out of eighteen prospects. The second shop had no shocks in stock, but three weeks after completing the check they had taken on a line and are now doing a good business.



and Promotion

people towards goods . . . When forces meet, a sale is made



The Fall sales season is here. The shop that is ready with the right re-sale items, and is prepared to sell winter service, is the shop that will get the business. Here is a list to check with parts and service salesmen:

Resale Items

- Chains
- Anti-Freeze
- Gas line anti-freeze
- Snow tires
- Batteries
- Wipers
- Windshield Washer Anti-Freeze
- Heaters
- Cooling System Cleaner
- Cooling System Sealer
- Radiator Hose and Clamps
- Polish and Wax
- Chrome Protector

Winter Services

- Cooling System Flush
- Winter Change-over
- Winter Tune-Up
- Chassis Lubrication
- Voltage Regulator Test
- Battery Test
- Brake Service
- Clutch Adjustment
- Universal Joint Lubrication
- Generator and Starter Test
- Heater Test
- Appearance Service
- Windshield Wiper Service



Christmas is Coming . . .

The same folks that come into your shop for repair work are beginning to wonder "What are we going to get Dad for Christmas?" Dad is scratching his head about Uncle Ben's present, and so it goes. Maybe you have the answer right in your accessory show case. Heaters, seat covers, cigar lighters and many other items make wonderful gifts. Now's the time to advertise them, display them and to make it known to your customers that you offer another good place for them to do their Christmas shopping.



To remind motorist that a cold season will soon be here, "Johnny Plug-Chek" has donned his winter garb by a full color promotion kit prepared by the Electric Auto-Lite Company. This kit promotes all types of winterizing service including a spark plug check-up.



The Miracle Power Division of the AP Parts Corp. is delivering its "Pusher-Pak" for Fall and Winter. It contains direct-mail envelope stuffers, compression test folders, reprints of magazine articles and a reproduction of a full page ad concerning their product. Window Streamers display the theme: "This Winter Keep Springtime in Your Engine."

Anti-Freeze Week (Oct. 6-13) has past, and now the real selling season has begun. The pre-season campaign was sponsored by the du Pont Company, makers of Zerone and Zerex, and featured Miss Anti-Freeze.





A clean, white service desk is a welcome sight to the ladies, who all too often connect repair shops with grease and grime.

by Arthur H. Nellen, Jr., Service Editor

FURNITURE in a shop, as well as in a home, can be the basis of an effective but inexpensive modernization program. We seldom think of the term "furniture" in connection with automotive service but is one of the most important assets of the repair shop or dealer service department.

Any shop, no matter how large or small, can modernize with the service merchandiser and the mechanic's benches which are now available. They are attractive, functional, and lend themselves to blending with other modern equipment which might be installed. This shop equipment is available in a variety of styles and models, ranging from a small rolling tool dolly to an impressive service manager's desk.

The latter unit is extremely valuable in establishing a customer-reception area, which is a "must" for any shop. As a car owner rolls onto the service floor from the street, his first thought is "where do I go now?" A clean white service manager's desk is an eye-catcher and leaves no doubt in the customer's mind as where to go for attention. Some service manager's desks have clever arrangements for displaying parts and accessories. For establishments with one or more service salesmen,

Modernization

An interior can be "spruced up" and made



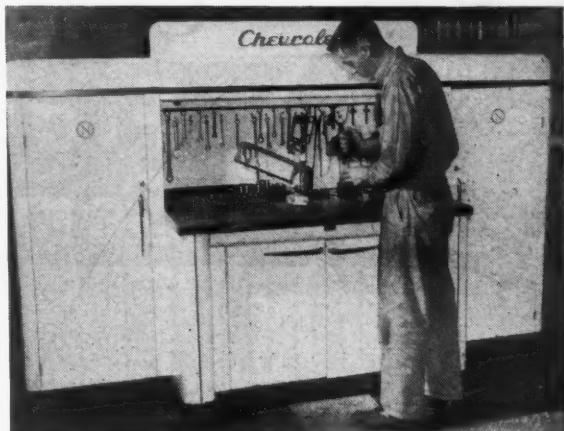
A desk for each service salesman promotes efficiency, makes an impressive looking reception area to greet the customer.

special desks are available for their use. Each of these units is designed first to help sell service through appeal, and second for the convenience of the service manager, service salesman or shop foreman.

But that's only part of the story. If the shop is equipped with modern "furniture" throughout, the customer can look beyond the reception area and see gleaming white benches with cabinets, shelves, drawers, built-in parts, washers, electrical outlets, lights, and so forth. Each specialist is identified by the department name, and in some cases the mechanic's name is mounted in an illuminated panel. Even the pol-

For Any Shop

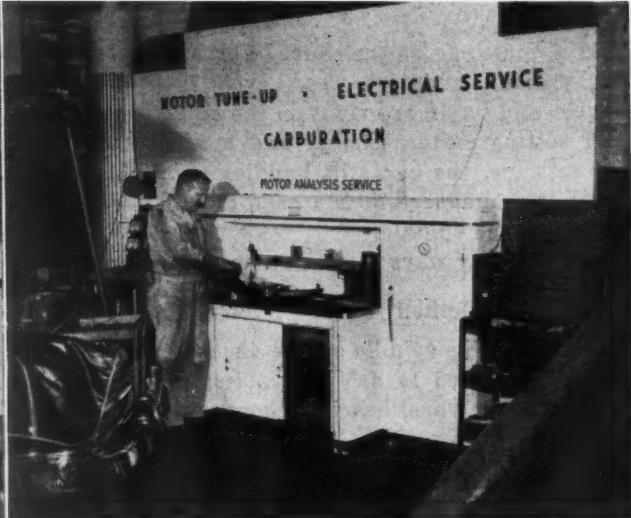
more workable with modern shop furniture



Convenience is the important feature of the work-benches, from the mechanics' standpoint. Plenty of working area and storage space.



Lined up on a shop wall, mechanics' benches not only look good, but are helpful in keeping the entire interior neat.



With a lettered panel built on to a specialist's work-bench and cabinet combination, the unit becomes a salespiece.

isher has his own rolling cabinet which serves as a storage place for polish, rags and so forth.

Almost every shop has its own particular "eyesore"—a cluttered wall, a pile of junk which has accumulated or some other part of the building which detracts from the looks of the rest of the interior. Here's where this shop furniture can be used very effectively. The area is cleaned up and painted, and then the merchandisers or work benches placed in position. The result is a renovated section of the shop, which suddenly becomes both useful and pleasing to the eye. The cabinet doors permit storage without disarray, and the white enamel finish

permits easy cleaning, so that there is no reason for the area to become an eyesore again. For the mechanic, everything is convenient due to the functional design of the workbenches.

The improved working conditions throughout the shop help to create an air of efficiency about the shop, a factor which is valuable in creating customer confidence. More satisfied customers plus efficient personnel adds up to more work turned out, and increased profits. Consequently, the modernization program can pay its own way in time.

In a competitive market, modernization is imperative for a shop to survive.



Chilton's MOTOR AGE

Flat Rate and Service Manual

How to Check Bent Spindles

by Andy Grey, Editor, Chilton's Motor Age Flat Rate and Service Manual

ABENT spindle can be the cause of erratic steering, wander, and tire wear, even if caster, camber and toe-in are right on the ball.

If, after setting caster, camber and toe-in to the preferred settings, the car still handles erratically or tire wear is pronounced, it is a good idea to check the condition of the spindle.

There are two easy ways to check a spindle:

The Dial Indicator Method

The condition of the spindle can be checked with a dial indicator attached to a V block. Remove road wheel and the inner wheel bearing, thoroughly clean up the spindle.

Mount the dial indicator on the V block and place the V block on the spindle outer bearing surface. Adjust the dial indicator so that its finger contacts the inner bearing surface of the spindle.

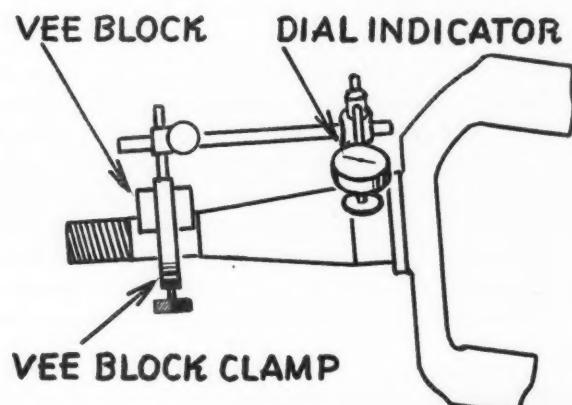
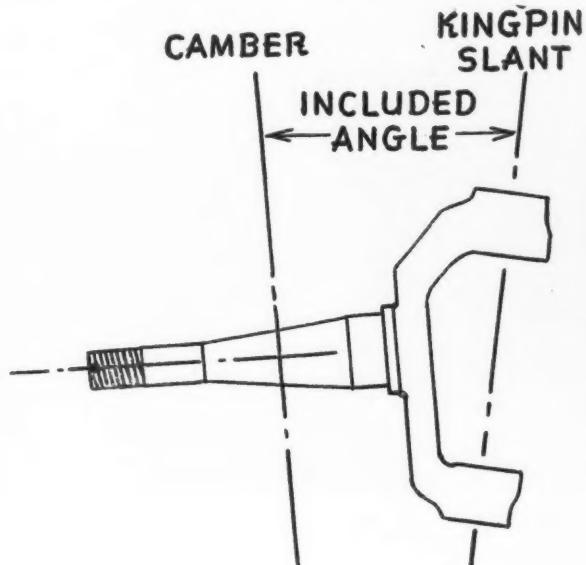
Now rotate the V block around the spindle so that the indicator will show concentricity between the inner and outer bearing. Maximum reading on the dial indicator should not exceed .002 in.

Where a spindle is bent, oddly enough, it will generally be found to be bent downward, not upward.

The Aligning Gage Method

To check for a bent spindle on a front end aligning machine, check camber and also king-pin slant. The reading for camber should be added to the reading for king-pin slant and the total noted. Do this for both sides. If the total for both sides is exactly the same, it may be presumed that both of the spindles are in good condition since it is unlikely they will both be bent exactly the same amount.

However, if one of the totals differs from the other it means that one of the spindles is bent. Ordinarily, it may be presumed that the bent spindle is the one having the greater total of the two since in most cases spindles bend downward.

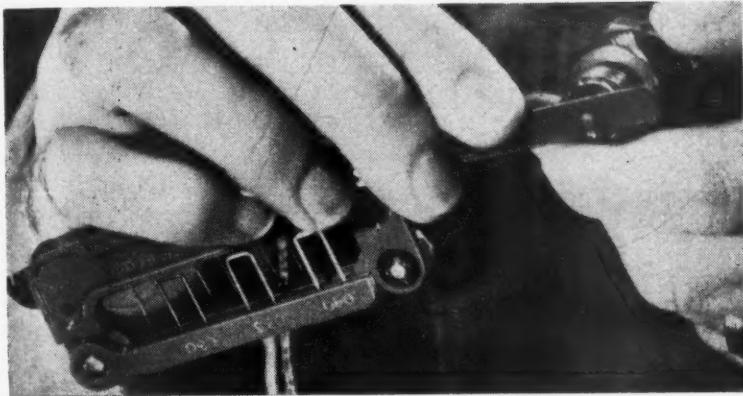




NEW

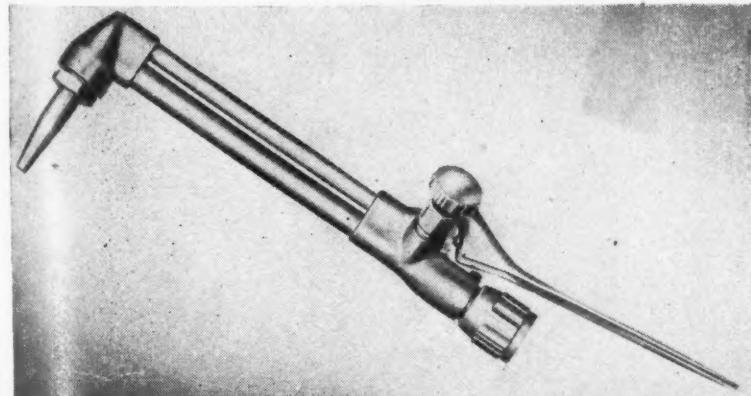
PRODUCTS SHOW WINDOW

FOR FURTHER INFORMATION USE
POSTCARD FACING OTHER PAGE



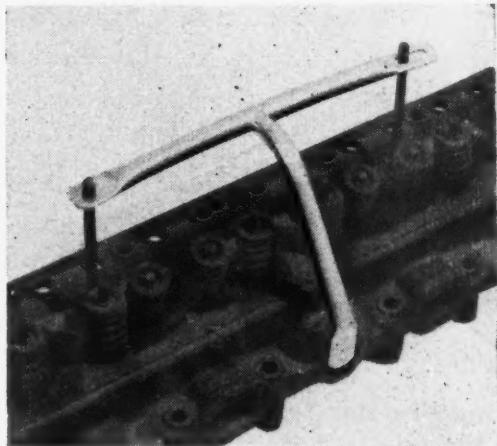
▼412. Cutting Attachment

Linde Air Products Company: A new cutting attachment that cuts steel and other metal up to eight inches thick, has been announced. It is intended for intermittent cutting on general, run-of-shop jobs. Twenty-three oxyacetylene cutting nozzles are available for all types of cutting, and regardless of nozzle used, all pre-heat flames down to the smallest, retain their adjustment and can be used without popping or backfiring, the manufacturer states.



◀413. Spark Plug Tool

Champion Spark Plug Company: A multi-purpose tool for spark plug servicing is being made. The device contains stainless steel wire gap gages, two gap adjusting slots for electrode bending, a double cut precision file for refacing the sparking areas, and four gaskets "reject" slots for determining the utility of used spark plug gaskets. The tool has a plastic body design to protect the various components from damage.



▲414. Head Lifting Tool

National Machine & Tool Co.: A new head lifting tool for Chevrolet and other valve-in-head engines has been announced. The tool permits one man to handle the head since the head is always parallel to the block and there is no dan-

ger of damaging gaskets. It is made of light weight tubular steel with welded joints, and takes a positive grip on the head. Yet it is said to be instantly attached or removed.

415. Chamois Substitute

Miracloth Corporation: A double duty latex treated chamois replacement called "Wet-Pak mirasham," which washes like a sponge, wipes like a chamois, and needs no "break-in" rinsing, is now on the market. The lint-free non-woven fabric is moistened at the factory and roll-packed while still in an airtight transparent plastic bag. When the bag is opened, the fabric is soft and pliable. It is said to get softer with each use and never shrinks or stiffens, even when washed in boiling water and dried over hot pipes. It is not affected by harsh soaps, detergents, solvents, grease, oil alcohol or ammonia.

416. Single Post Hoist

Globe Hoist Company: Manufacture of the single post "Frame-Kontact" type as part of its regular line has been announced by this firm. This hoist is said to offer features of neater installation, greater accessibility to underside area of the car and to wheels, and relaxed suspensions permitting lubricant to penetrate to important wear points. Lifting capacity is 8,000 pounds and lifting stroke is 70½ inches.



417. Rubber Exhaust Hose

Continental Rubber Works: A new synthetic rubber hose for carrying off exhaust fumes has been developed. One of the chief advantages claimed for the hose is its crush-proof construction. No matter how often it is run over, the hose snaps back into shape automatically. It cannot mar or scratch finishes, important in overhead systems. Because of its neoprene construction, the hose is unaffected by oil, gasoline, and grease and is highly resistant to exhaust heat.



418. Under-Car Mat

D. W. Moor Company: The "Auto-Dydee" is a crease resistant neoprene mat for use under cars in showrooms, on shop floors and other places where oil and grease create problems. It has a raised bead around the edges to hold any drippings on the mat while cross ribs keep oil from running end-to-end on sloping floors. It measures 38 x 60 inches.

419. Battery Chargers

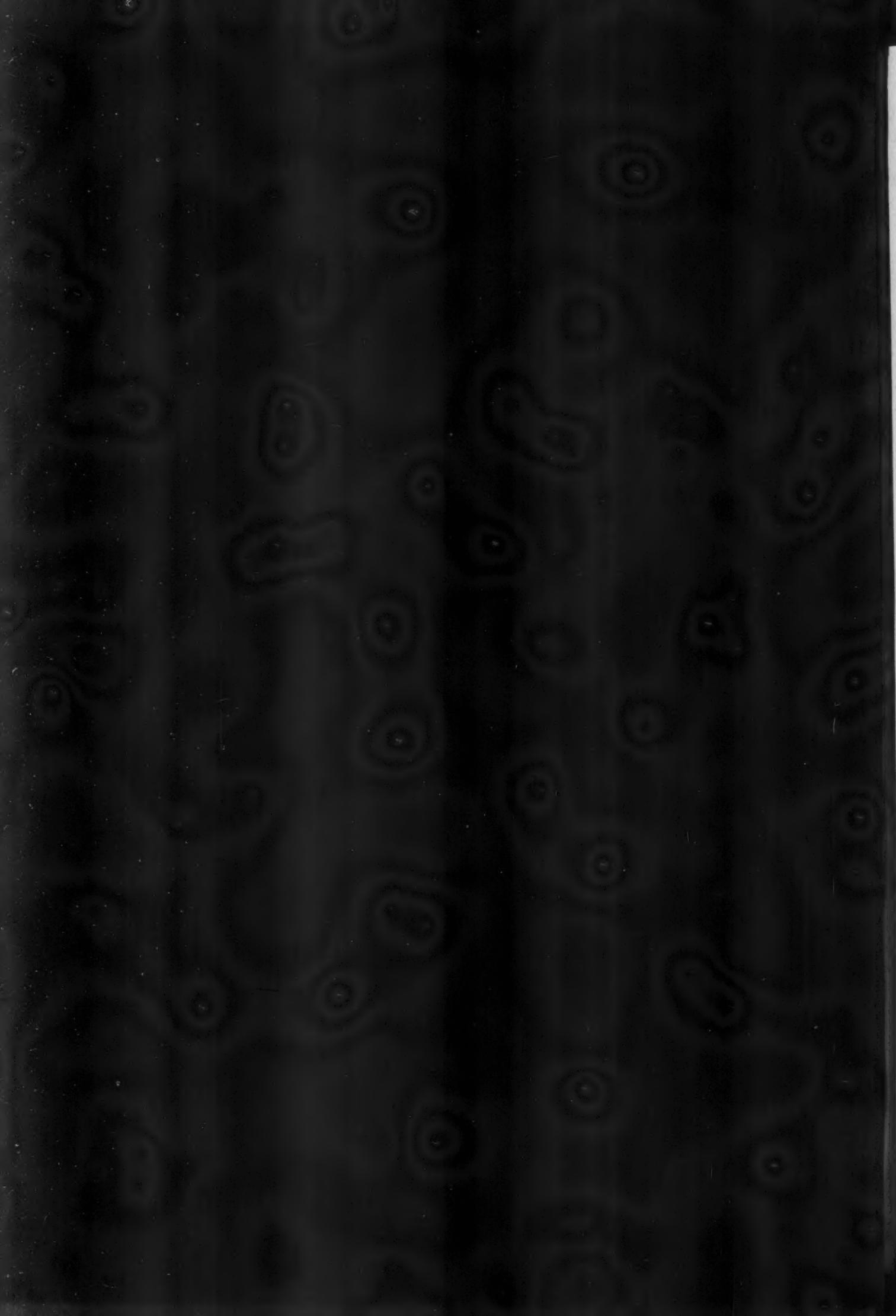
Allen Electric & Equipment Co.: A complete new line of eight battery chargers under the name of "Dyna-Chargers" has been announced. The line includes two models, designed to handle both 12 and 6 volt batteries. There is a three wheel mounted, 100 ampere fast-slow charger, three portable 75 ampere fast-slow chargers, a wall type slow charger and a 4 ampere overnight charger for home use. The latter is a resale item. A new method of battery testing, "Dyna-Meter" is an integral part of the deluxe models.



a
in
re
ad
at
on

new
of
n-
and
d,
75
er
se.
ry
he

952



420. Fuel Conditioner

Gulf Oil Corp.: "All year automobile fuel system conditioner," described by its maker as a highly versatile aid in the elimination of fuel system difficulties in the average motor car, has been developed to alleviate many of the troubles encountered in the fuel system. It contains solvent, to remove gum in the carburetor and fuel system, and it protects against further gum formation.

It is also said to free sluggish valves and aid in upper cylinder lubrication. It absorbs moisture, which condenses in the fuel system, thus providing an anti-freeze

action. A corrosion inhibitor protects carburetor parts from corrosion due to moisture.

421. Screwdriver Line

Herbrand Tools: A new design of screwdrivers, with the "Fist-Fit" handle, has been announced. It is said to make it easy to loosen tight or frozen screws. Blades are only 2½ inches long, enough to enable the mechanic to use them in very close quarters. The screwdrivers have a "T" shape average-ment so that a great deal of leverage and pressure can be put on them. They are available in two sizes for Phillips screws and two sizes for flat screws.

422. Paint Reducer

The Arco Company: A synthetic enamel reducer and accelerator which is said to virtually eliminate "orange peel" and the stippling effect of overspray, has been announced. Named Super Adflo Reducer and Accelerator, the product, which is characterized by slower initial drive and conventional reducers, is said to substantially increase and prolong the flow of synthetic enamel. This added flow and slightly longer flash-off time gives the finish coat of enamel time to settle to a mirror-like level before the volatile elements of the reduced can evap-

More Info

on new products in this issue which are of special interest to you can be obtained by using the free post card at the right. Fill in your name, address and other information and circle the numbers of the new products which interest you. Tear out the card and drop it in the mail.

Here's How

You can pass your thoughts on Motor Age to its editors. Just write down the titles of the features you like best in this issue in the order of your preference. Then, in the next spaces, write in your ideas on making Motor Age more useful to you.

Frank P. Tighe, EDITOR MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

10/52

Please send me further information on the New Products, the code number of which I have circled below.

412. Cutting Attachment	420. Fuel Conditioner	428. Test Stand
413. Spark Plug Tool	421. Screwdriver Line	429. Radiator Tank
414. Head Lifting Tool	422. Paint Reducer	430. Lane Marker
415. Chamois Substitute	423. New Battery Line	431. Hex Socket Screws
416. Single Post Hoist	424. Ignition Merchandiser	432. Screwdriver
417. Rubber Exhaust Hose	425. Safety Lock	433. Hose Dispenser
418. Under Car Mat	426. Pipe Hanger	434. Touch-up Gun
419. Battery Chargers	427. Safety Catalog	

Your Name Your Title

Your Company

Jobber Independent Dealer

Address (Street & No.) (City) (Zone) (State)

Frank P. Tighe, EDITOR MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

10/52

We liked the following features in this issue of Motor Age:

1. _____
2. _____
3. _____

Here's how Motor Age can be more helpful to us:

Your Name Your Title

Your Company

Jobber Independent Dealer

Address (Street & No.) (City) (Zone) (State)

New Products Continued from Page 53

orate. An added advantage, the company claims, is that flying spray dust readily "melts in" when it lands on already finished surfaces. This is because the spray particles cannot dry before they land, so the tendency is to level out quickly and sink into the surface.

423. New Battery Line

Lee Rubber & Tire Company: A new line of automobile batteries

features the Lee Double-Life Battery which is claimed to combine all the advances developed by the industry in the past ten years. It is a 17-plate, 115-ampere battery, which is said to need water only three times a year in normal car use. The plates in this battery are Permacast Grids coated with a newly designed active lead oxide material. The separators have a separate panel of highly porous, non-organic material to which

spun glass mats are bonded on either side. The separators permit a free flow of electrolyte and provide a tight, three-ply insulation between the positive and negative plates, thus preventing shedding of the oxide from the plates. Transparent, plastic, Tel-Vue allow quick checking of the water. If water is needed, the words "Add Water" show at the bottom of the plug.

424. Merchandiser

The Holley Carburetor Company: The Holley Ignition Merchandiser provides coverage for Ford vehicles as far back as 1941 and late model Mercurys and Lincolns. The stock consists of caps, rotors, condensers, coils, diaphragms, and contact sets. The package is shipped complete with ignition stock, display rack, price list, condensed salesman's catalog and authorized dealer decal.

425. Safety Lock

The Sleetex Company, Inc.: A new, patented safety lock for all car doors is being marketed under the name of Twistlok. The manufacturer states that this is the only lock that can be installed on the rain gutter allowing protection at every door while the car is in motion or parked. Attachment is made with a screwdriver without drilling holes. The device unlocks only from the outside and has the advantage of keeping children safe in the car. It is available on merchandiser displays, holding twelve units or on individual display holding one unit. Dealer display assortments are also available, packaged in sets of four for sedans and pairs for coupes.

426. Pipe Hanger

AP Parts Corporation: The PR3 pipe hanger contains a spring clamp which holds a single tail pipe firmly, yet is said to be easy to disengage. One or a series of these hangers can be hung on nails in the wall at a handy spot for compact storage as well as neat display. Press the sides of the clamp and it loosens, allowing the dealer to remove the pipe easily.

(Continued on page 102)

BUSINESS REPLY CARD

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

POSTAGE WILL BE PAID BY

Chilton's MOTOR AGE

Chestnut and 56th Sts.

Philadelphia 39, Pa.

Attention: Frank P. Tighe, Editor

FIRST CLASS

PERMIT No. 18

Sec. 34.9, P. L. & R.

Philadelphia 39, Pa.

BUSINESS REPLY CARD

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

POSTAGE WILL BE PAID BY

Chilton's MOTOR AGE

Chestnut and 56th Sts.

Philadelphia 39, Pa.

Attention: Frank P. Tighe, Editor

A
all
n-
he
is
ed
ro-
he
At-
w-
he
ut-
of
ar.
ser
or
ne
nts
ets
for

R3
ng
ail
asy
of
on
pot
as
of
ng
ipe





Hot Tips on Hot Rods

**Sports Cars
Racing Cars**

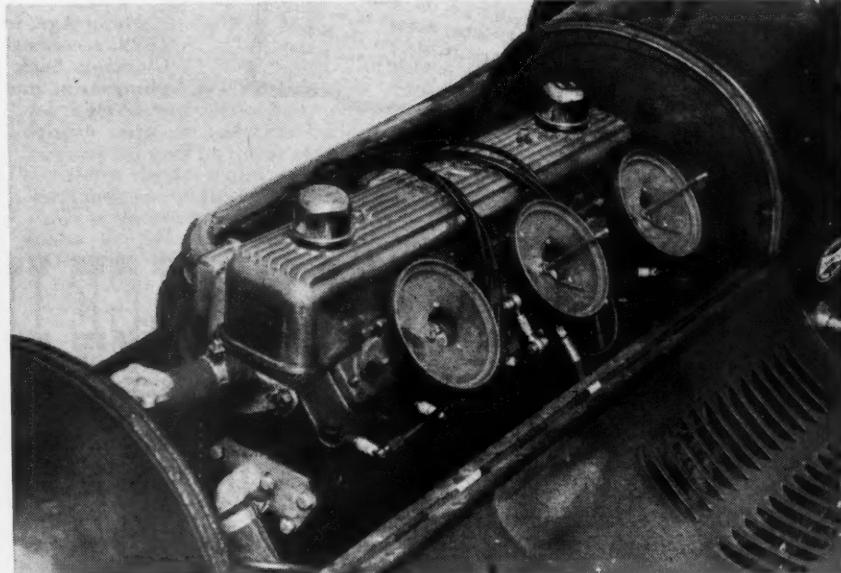
Increased RPMs From Souping Up the Ford V-8

THE first step in increasing engine rpm on Ford V-8s is to remove the heads and valves. Grind all the valve seats to a 30 degree angle instead of 45, which is standard. The 30 degree seat will give better fuel induction and also then grind the valve face to the same 30 degree angle. If the valve faces are worn, new valves should be used. Smooth and clean the valve ports. This is a must for top engine performance.

Valve spring tension should be checked on a reliable tester and if possible, obtain slightly heavier ones or add a spacer washer under the original to increase the tension.

Channeling the blocks will assure better gas flow but in doing so it decreases the compression ratio. Channeling is done by removing the metal on top of the block between the cylinder and the valve ports. This can be done with a grinder.

To increase the compression either obtain special compression heads or have the present ones planed or milled. Usually .040 inch can be safely removed. If more is desired, then you must determine the clearance between the inside top of the combustion chamber and the valve heads. This can be done by using putty or plaster of paris.



GMC Engine with Wayne head. Note the three carburetor mountings.

First put the cylinder in firing position (piston on top with valves closed). Remove the spark plug and add the putty compound. After the compound has been set, then remove the head and figure out the exact clearance.

Good carburetion is a must. Make sure the fuel pump is in good shape and the flexible line. Clean the carburetor and set the float level to the manufacturer's specifications. Usually a richer jet will improve the performance but it pays to try the original first, then experiment with various jets.

The air cleaner should be washed

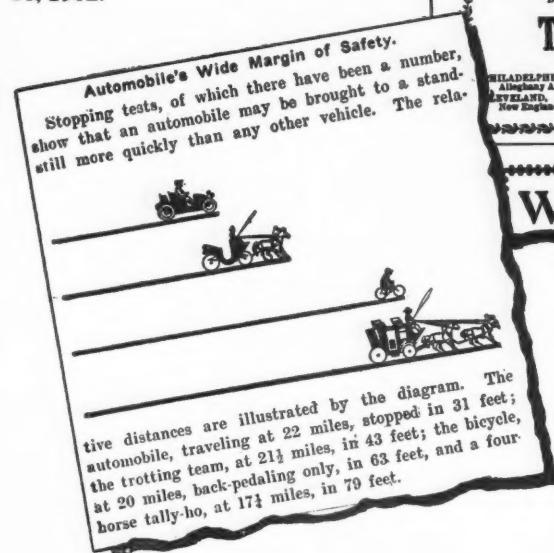
and oiled to provide adequate draw. The muffler should be examined closely and the exhaust and tail pipes. Any kinks in the pipes or obstruction in the muffler will set up back pressure.

Install V-8 Engine in A 1932 Model B Ford

I have a real problem. I would like to install a V-8 Ford motor in a 1932 B Ford. Also I would like to use a column shift. My first problem is how to mount the rear of the transmission in my chassis. I

(Continued on page 150)

Here's an old timer (right) an advertisement for Exide Batteries which appeared in the July 3, 1902, issue of *Motor Age*. Clipping below indicates that our early predecessors were safety conscious, back in Aug. 14, 1902.



ADVERTISEMENTS 29

WHEN ORDERING AN AUTOMOBILE SPECIFY THE "Exide" BATTERY

NEW YORK, 16 West 32d street. PHILADELPHIA, 25 N. Broad street. BUFFALO, 200 Pearl Street.

EXIDE BATTERY DEPOTS (CHICAGO, 264 Michigan Boulevard. ST. LOUIS, 197 Olive Street. OTHER STATIONS WILL BE ANNOUNCED LATER.)
For Purchasing, Charging and Caring for Exide Batteries.

THE ELECTRIC STORAGE BATTERY CO.
PHILADELPHIA.

PHILADELPHIA, Allegheny Ave. & 16th St. NEW YORK, 100 Broadway. BOSTON, 90 State St. CHICAGO, Marquette Bldg. BALTIMORE, Continental Trust Bldg. NEW ENGLAND Bldg. ST. LOUIS, 100 W. Main Street. SAN FRANCISCO, Nevada Block. DETROIT, Michigan Electric Co. HAVANA, CUBA, G. F. Greenwood, Mgr., 21 Expedado St.

Why is it?

GASMOBILES.
American Built. Immediate Delivery.

Motor Age, which was first published in September, 1899, records the history of the automobile industry. Glancing back through its pages, here are a few glimpses of our early times.

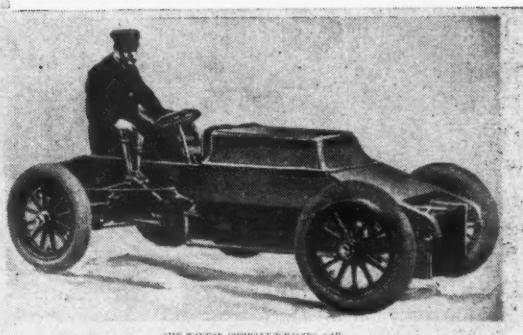
FROM AN EARLY PAGE IN

MOTOR AGE



A two-passenger Prescott (left), 4½ horsepower steamer, weighing 1,350 pounds. Gold medal winner in the Long Island endurance run, 1902.

The Winton racer (below), called the Bullet, was proclaimed to be the forerunner of the Winton for 1903. A four-cylinder job.





BODY SHOP TIPS

How to Glue Back Door Rubbers in Tight Places

We have found a very easy way to glue back the weatherstripping on the late model cars. As generally is the rule, they come loose on the inside of the door next to the body, making it difficult to get to with weatherstripping cement.

By installing a piece of windshield wiper hose over the top of a tube of weatherstripping cement, they are easily glued back without getting the cement all over the weatherstrip. *Richard Batla, Schroeder Motors, Taylor, Texas.*

Headlight Removal Aids On Fender Work

We have found that on a number of jobs where the straightening is on the inner part of the fender it is somewhat awkward to work from below. In order to be in a more comfortable position, and to see what we are doing, we usually remove the headlight unit and the



inner shell. This permits putting the hand up inside so that a dolly can be held comfortably and the

BODY SHOP TIPS are worth

\$7.50

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

fender can be worked on in standing position. *Mike DiAmbrosi, Raymond P. Scott, Lancaster Avenue, Ardmore, Pa.*

Save Feather-Edging Discs With Masking Tape

I find that running a strip of masking tape around the outside under edge of paper feather edging disc prevents it from tearing. *Walt's Body Shop, Lake Preston, South Dakota.*

Storing Fender and Quarter Panel Moulding Strips

We were having an awful time keeping our moulding strips separated until we got two pieces of lawn fence 3-ft. x 6-ft. It had openings 3-in. x 6-in. between the strands. We made two wooden frames and attached the pieces of lawn fence and built them into our sheet metal department storage racks, one behind the other or parallel, and 2½ ft. apart. Over each opening we hang a parts tag with

wire containing the number and year of the car that the moulding fits. We only stock 3 or 4 of each number so the 3-in. x 6-in. opening takes care of our need satisfactorily. If you stock more of each number, a fence with larger openings, it will serve your purpose better. *Driver Sales & Service, Inc., G. W. Hicklin, 212 Main Street, Waynesboro, Va.*

Making a Double-Duty Disc Sander

I have a ¼-inch drill which I use for feather-edging automobile paint. I find it a very good time and back saver, by first cutting a 6-inch disc out of 80 grit sand paper, with a 1½ inch hole in the center. The hole prevents the sand paper from tearing and wrinkling. Then cut a 50 grit disc, 3½ inch with a ½ inch hole in the center. Now I put the 50 over the 80 and I have a very good feather-edge and rough sander in one. *Ernest Warro, Dave's Auto Service, 4844 Broadview, Cleveland, Ohio.*



Other valuable information of the type presented each month in The BODY SHOP is available in Chilton's Motor Age Body and Frame Manual.

Building the Jabro Sports Car



Three years, \$3,000 in materials and over \$10,000 worth of equipment were involved in the building of this sports car



Fig. 1. With fenders and deck lid clamped in place, Broadwell constructs the body frame.

Fig. 2. Broadwell turned out the metal part of the steering wheel on a lathe. He finished the rim with twelve pieces of walnut.



ONCE upon a time a 1942 Studebaker Champion was junked after a wreck. A St. Louis business man, named James P. Broadwell, bought the wreckage (stripped of its body parts) and carried it into the basement of his house. Three and a half years later, the Jabro, the only sports-car of its kind in the world emerged. Broadwell worked during his spare time, chiefly on weekends, and spent three thousand dollars for material to produce his car. He estimates that he has about ten thousand dollars invested in tools.

Broadwell built up the Jabro from parts he tooled himself from raw materials, from specially made factory parts, from new and used

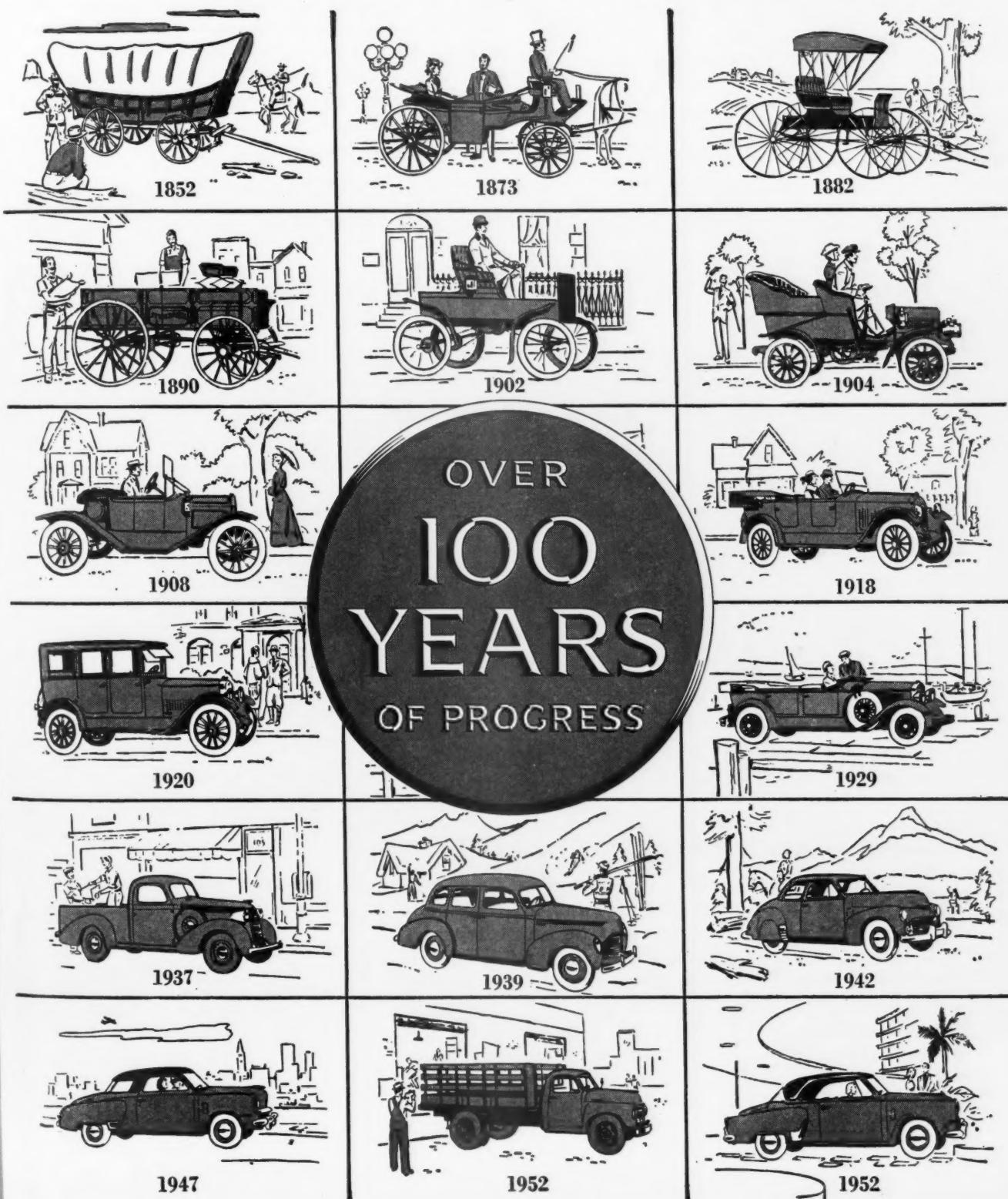
(Continued on page 98)

Fig. 3. Having completed his dash, Broadwell installs it during final wiring. Instrument panel included a tachometer.



1852 ★ Studebaker ★ 1952

The name with 100 years of fame
on the roadways of the world





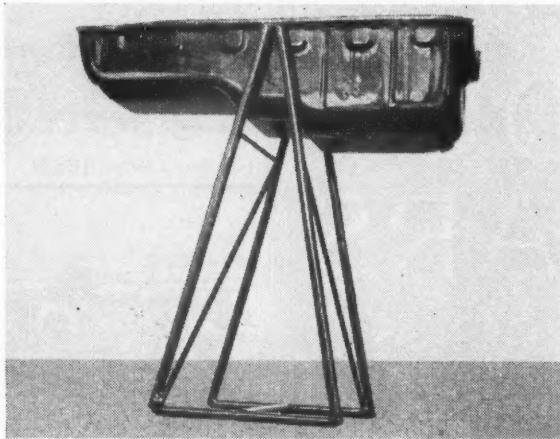
Shop Kinks

If you've come upon an original idea for making a job easier, a special tool, short cut on a job or any trick of value to other readers, write it down and if necessary, make a rough sketch. Just make it clear. Send it to Motor Age. If we can use your Kink it may bring seven-fifty, possibly 25 dollars. All submissions become the property of Chilton Company. Because of the numbers received, no entries can be returned.

For The Best Kink Published Each Month . . . \$25

For All Kinks Published Each Month . . . \$7.50

Best Kink of the Month



Stand Supports Engine on Chevrolets

We have developed a stand for use when there is a necessity for removing the transmission or the clutch on a Chevrolet car. It can be used on any Chevrolet car and something of this type is necessary to use on the 1952 models. This stand rests on the lower side of the block and there is no danger of crushing or denting the oil pan while the work is in progress. We have several of these and have found them very practical. One can be made from old tie rods of the right length welded together. *Carl Thoresen, Ser. Mgr., Rapids Chevrolet Company, 601 First Avenue, Southeast, Cedar Rapids, Iowa.*

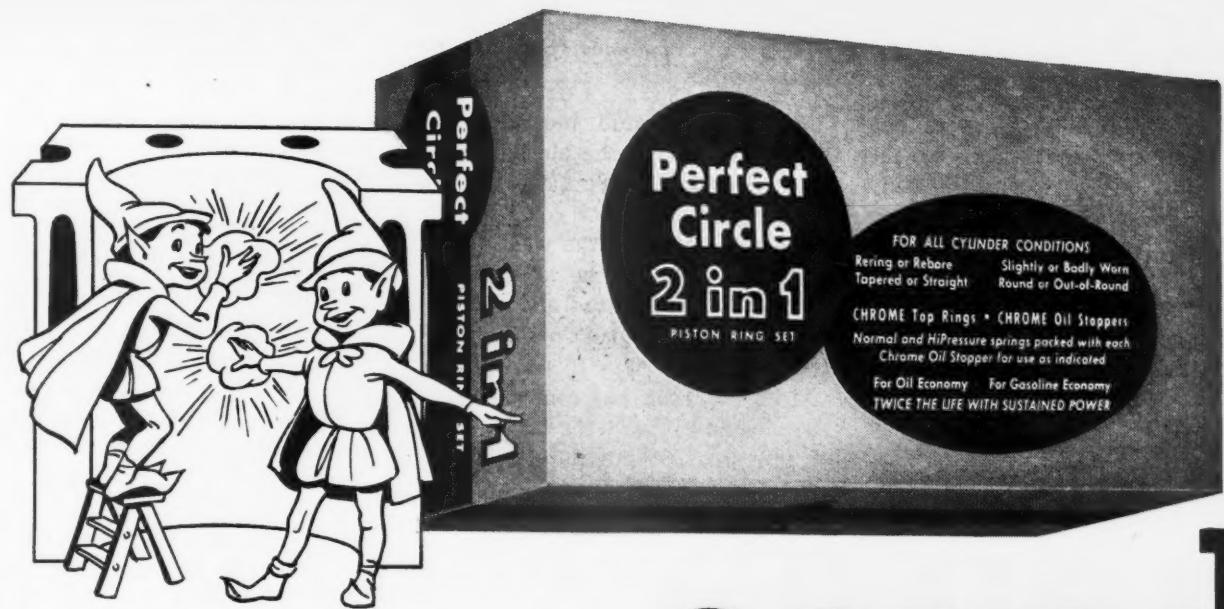
Use a Clothes Pin in Replacing Valve Lifter Body

Recently I had to replace a broken valve lifter body in a 1951 Lincoln which required removing the motor and the Hydra-Matic transmission. I saved myself considerable time and labor by getting spring clothes pins to hold up the valve bodies while removing the camshaft. The bad part is putting the camshaft back into the idler ring that rolls on the cam operating the fuel pump. It drops down in the gear case. I used a small magnet that would go through the push rod hole to lift up the ring making it quite easy to push the camshaft into position. *Gordon North, Highland Park Lincoln-Mercury, 1890 North First St., Highland Park, Ill.*

Sure-fire Method for Silencing Chev. Tappets

Quite a few years ago I had trouble silencing a set of Chevrolet tappets. I ground the rocker arm as usual and faced the ends of the valves and rebushed the rocker arms and thinking I had a fair job I started up the engine, warmed it up and adjusted the valves. They wouldn't quiet down so finally I took the adjusting screw out and ground the ball end on them. I had

(Continued on page 62)



Cylinders should be **saved**

...not shaved



Perfect Circle's 2-in-1 Chrome Piston Ring Set assures positive oil control... without shaving the cylinder walls on each stroke! Solid chrome plating, applied to **BOTH** top compression rings and oil ring rails gives the 2-in-1 Chrome Set more than twice the life of ordinary sets!

What's more, the 2-in-1 Chrome Set is *actually two sets in one*—because two expander springs are included with every Chrome Oil Stopper, giving mechanics a choice of spring pressures for every installation.

You'll get maximum performance, with sustained power, whether cylinders are tapered or straight, round or out-of-round! Perfect Circle Corporation, Hagerstown, Indiana.

Perfect Circle **PISTON RINGS**

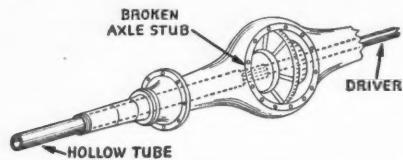
The Standard of Comparison

Shop Kinks Continued from Page 60

then a flat surface of about $\frac{1}{8}$ inch and I did the same thing with the push rods. After wearing for many thousands of miles these surfaces wore out the ball end and created a nib on the end therefore allowing the push rod to flutter so that you could not silence them even without any clearance. Ever since I've had no trouble with Chevy tappets. It will work on all of them except the late ones and the Powerglides. *George Leimantini, Mass Auto Service Station, Mass, Michigan.*

Removing Axle Stubs On Full Floating Rears

I have a lot of trouble removing stubs on full floating axles, every time I try to knock out the small piece in the splines, it drops down in the housing, making it impossible to get out without removing the



differential from the housing. It is not possible to remove the cover and remove the piece because the housing doesn't leave room enough between the housing and the bearing caps. I took a piece of heavy tin, five feet long and four inches wide and made a tube which I inserted up to the broken piece. Then I removed the other axle and pushed the small broken piece into the tube with a long bar. *Harold Trautman, Lexington Motor Co., Inc., 103 West 8th Avenue, Lexington, No. Carolina.*

Removing Broken Studs With a Welding Torch

I have a shop kink that may be helpful to the garage mechanics. If you have a broken stud that you would like to remove from a tapered hole, this is a quick and sure way of doing it.

Place a nut, the next size larger than the stud, over the top of the hole where the broken stud is. Use an arc welder and weld the broken stud to the nut, filling the nut with the weld. Hold the arc in the middle

of the broken stud and allow the metal to flow to the sides and fill up the hole. Do not move the arc around in the hole as you will fuse the other metal to the weld.

The heat from the arc will expand the broken stud and when it cools off it will shrink and be much looser than it was to begin with. After the weld has cooled, take a wrench and remove the broken stud by turning the nut like you would a cap screw.

We use this method wherever possible, except in small screws where there is not enough room to weld inside the nut. This method has proven to be about twice as fast as drilling the threads or even breaking a tap off in the hole. *R. L. McClure, 1012 24th Street, Bakersfield, Calif.*

Tool for Shorting Out Chrysler V-8 Spark Plugs

Here is a time saver on DeSoto Firedome and Chrysler Firepower motors. It is quite difficult to short out or check to see which spark plug is missing due to the fact the spark plug sits down in a deep hole with a dry proof insulator over it.

I take a three inch piece of steel choke wire and sharpen one end so it can slide between the spark plug wire and the rubber cover on the distributor cap. Stick the other end into a 12 inch piece of high tension wire, to be used to short out the spark plug. To make the tool take the three inch piece of choke wire, sharpen one end and stick the other end into the high tension piece of wire. With this tool you can insert it along side of the spark plug wire at the distributor cap and short out only the plugs you desire. *Wesley Tenbrook, Tenbrook's Garage, U. S. Highway #6, North Glenwood, Calif.*

Insulating Transmission Heat from Driver's Feet

We have had some complaints about excessive heat coming up through the floor over the Power Glide unit and causing the right foot to get very hot. I correct this

condition by placing a piece of corrugated cardboard from an accessory box under the floor mat, under the driver's foot. This has corrected the complaint. *Sam Bernstein, University Chev. Inc., 1605 Jerome Avenue, Bronx, New York.*

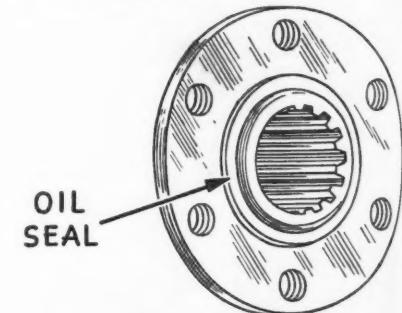
Short Cut on Installing A Stop Light Switch

I find it a difficult job for one man to replace a mechanical stop light switch. I take two screws the same size and thread of the mounting screws, only an inch or so longer. Cut off the heads and screw them into the new switch. Depress the brake pedal. Put the switch into position and let the pedal back. This will hold the switch to the floorboard until you remove and replace with the original screws. *Gordon M. Arion, 6427 8th Street, N.W. Washington, D. C.*

Removing Oil Seals at Rear of Dynaflow Unit

To remove the oil seals at the rear of a Dynaflow unit, without removing the torque ball, try this method.

Jack up the car and put stands under the frame. Remove the horseshoe on the brake line and release the emergency brake at the adjustment. Then remove the six $\frac{3}{8}$ inch cap screws at the torque ball. Use a special jack on this to push the differential straight back until the shaft is free at the spline. Then jack the shaft and housing up out of the way.



Use a very sharp pointed pick end hammer. The seal is easy to remove by prying a little at a time with the pick. The new seal is then installed by tapping with a small hammer around the edges of the seal. The complete job will only take $\frac{3}{4}$ of an hour. *Eldon McQueen, 2337 Big Bend Blvd., Maplewood, Missouri.*

Mister - this is IT! This outfit brings wheel aligning right down to its ABC's!



IN ANY SHOP... regardless of the equipment you may now have ... this Snap-on Wheel Alignment outfit will prove faster and easier for your men to use! It's a dependable business-builder ... in a few minutes you can show a customer exactly what's wrong... and you've got another profitable aligning job! The equipment is portable... use it anywhere! It's accurate... *none more so* when it comes to checking Caster—Camber—Toe-in—Toe-out-on turns. It's simple to use. It's fast. *And the price is good news in any shop's budget!*

Interested? Let your Snap-on Man demonstrate right in your shop, right *on the job*. If you'd like full information immediately, send for descriptive bulletin and the complete Snap-on catalog of more than 4,000 quality hand-and-bench tools.

SNAP-ON TOOLS CORPORATION

8036-J 28th Avenue, Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation

ACCURATE!
SIMPLE!
PORTABLE!

MAGNETIC CASTER-CAMBER GAUGE

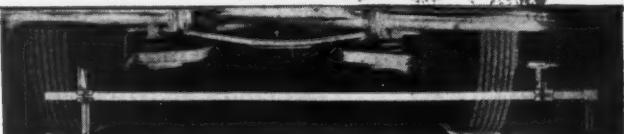
Multiple magnets grip firmly on machined surface of hub—instant reading—no tricky adjustments—no computations! Spring-tensioned centering finder automatically centers gauge!

TURNTABLE SET

Precision built. Turning plates "free-floated" and mounted on ball bearings. Large pointers give accurate degree readings for caster and geometry.

TOE-IN TRAMMEL BAR

Seven-foot bar with traveling gauge gives you a fast method of checking toe-in. The traveling gauge is calibrated in inches for easy reading.



burden on the work.

Every establishment has a basic work-day, usually eight hours, so there is a basic time factor. It is not hard to determine the average number of hours your shop works during a day, week, month or year. Overhead expense in dollars usually averages about the same from month to month if the books are

kept properly and the operator watches expenses closely. It will not equalize to the penny each month, but you can strike an average. This is where job cost accounting differs from financial accounting, which records income and outgo as sales are made and bills are paid. The financial accounts must balance to the penny every

month, otherwise, the bookwork is inaccurate.

Suppose your overhead expense is \$600 a month and you have two men each working eight hours a day for 25 working days in the month; then eight times 25 is 200 hours of labor per man each month and 400 hours for two men each month. Each labor hour, therefore, carries \$1.50 in overhead expense (400 divided into \$600). If two men put in 16 hours on a job, then \$24 worth of overhead expense is consumed during that time. Add \$24 to the cost of labor and materials to get the over-all cost for the work. You are paying out this amount on the job, so the customer should give it back to you, *plus a profit*. How much profit depends upon what you think is reasonable after including an adequate salary for your managerial services under overhead expense. If the customer does not pay enough to cover the over-all cost and the desired net profit, you lose on the job.

A lack of understanding about the overhead calculation is common among those doing service and repair work in this field. Too many operators think of labor cost as the wages paid their mechanics and overlook the fact that each mechanic carries his share of the overhead expense, because there is no way to get back this outlay except through the work done by these men. So, divide the monthly overhead expense in dollars by the number of labor hours worked to get the overhead chargeable to each job they do. Some accountants combine the hourly wage rate and hourly overhead rate, calling it the labor-hour cost. We suggest that you keep them separate.

The foregoing covers the fundamentals of costing jobs on a time basis. The formula is simple enough. You should have no trouble with it if your records are adequate and accurate. Bad bookwork, however, has ruined the labor hour costing method for more than one automotive businessman. The important thing is to make sure that you charge up all the expenses under overhead that should be charged to it, such as depreciation, owner's compensation, loss on inventory, loss on bad debts, and prorated annual expenses.

Replace and be Safe
with HYATTS

In replacing Hyatt Roller Bearings always remember this—the safest bearings to use are the same size and type of Hyatts that you take out.

Because these Hyatts were properly "engineered" into the car, truck or bus in the first place, you'll always find them to be best suited for replacement purposes too.

Hyatt Bearings Division, General Motors Corporation, Harrison, N. J. and Detroit, Mich.

HYATT ROLLER BEARINGS

AVAILABLE EVERYWHERE THROUGH UNITED MOTORS DISTRIBUTORS



Do you recognize these famous movie stars?

In New York and other fashion centers, they keep dummies made to the exact measurements of Hollywood stars.

When a star wants a new gown, she calls her shop—and it's measured right on her model!

Then it's only a matter of hours before the gown is in Hollywood. For

these style centers ship their fashions the world's fastest way—via Air Express!

Getting new fashions *first* is important to Hollywood stars. But it's even *more* important to fashion buyers in stores all over the country . . . where a few days can mean the difference between profit and loss.

That's why stores (as well as stars) get their fashions Air Express!

Whether your business is fashions or factories, you can profit from regular use of Air Express. Here's why:

IT'S FASTEST—Air Express gets *top priority* of all commercial shipping services—gives the fastest, most complete door-to-door pickup and delivery service in all cities and principal towns *at no extra cost*.

IT'S DEPENDABLE—Air Express pro-

vides one-carrier responsibility all the way and gets a *receipt upon delivery*.

IT'S PROFITABLE—Air Express service costs less than you think, gives you many profit-making opportunities.

Call your local agent of Air Express Division, Railway Express Agency.

1952—OUR 25TH YEAR.



Wheel Alignment . . . Continued from Page 41

of each other. If the caster and camber are not within these specified limits, proceed with the adjustments.

Caster and camber must be adjusted together to obtain the best average setting of each within the specified limits. If the camber is incorrect, and cannot be adjusted to proper limits, adjust the camber

as close to the specifications as possible and then check the king pin inclination before attempting any bending.

Checking King Pin Inclination

With the camber known to be within specified limits, king pin inclination should check within specified limits. If camber is

correct and king pin inclination is not correct, a bent steering knuckle support is indicated. If the camber is incorrect beyond limits of adjustment and king pin inclination is correct or nearly so, then a bent steering knuckle is indicated. If the camber and king pin inclination are both incorrect by approximately the same amount, a bent upper or lower control arm is indicated. No adjustments are provided for king pin inclination as this factor depends upon the accuracy of the front suspension parts. Distorted or bent parts should be replaced with new ones.

Adjusting Toe-In

Toe-in means that the front wheels are closer together fore and aft. Generally speaking, wheels are toed-in because they are cambered. When a car operates with zero camber, it will be found to operate with zero toe-in. As the required camber increases, so does the toe-in.

Turn in the steering wheel until the lower spoke is vertical with the front wheels and straight ahead in position. Measure the horizontal distance from the near edge of the front part of lower control arm shaft to the front edge of the brake backing plate on each side. Adjust tie-rods if necessary to make the measurements equal on both sides.

Checking Turning Radius

With the front wheels resting on a full floating turn table, turn wheels to the right until the outside left wheel is set at 20 degrees. The inside wheel should then be set at the angle specified. Repeat this test by turning the front wheels to the left until the outside right wheel sets at 20 degrees. The inside left wheel should then be set at the angle specified.

Errors in steering geometry generally indicate bent steering arms but may also be caused by other incorrect front end factors. If the error is caused by a bent steering arm, it should be replaced. A replacement of such parts must be followed by complete front end check.



QUIK SEATING!

If you think "Quik" Seating on the park bench gives you a thrill, you ought to try a set of the new Burd ND-800 Oil Rings in your next re-ring or re-build job. They are just what it takes to make you and your customers happy. *For there will be:*

NO SCUFFING—NO SCORING—NO BREAK-IN

Ask your Burd Jobber to show you the new *Graf-Flox* treated ND-800 Burd quik-acting oil ring. NEW design—new flexibility—new features thru-out assure maximum oil control with minimum cylinder wear even in badly worn engines.

BURD PISTON RING COMPANY

BURD
GRAF-FLOX

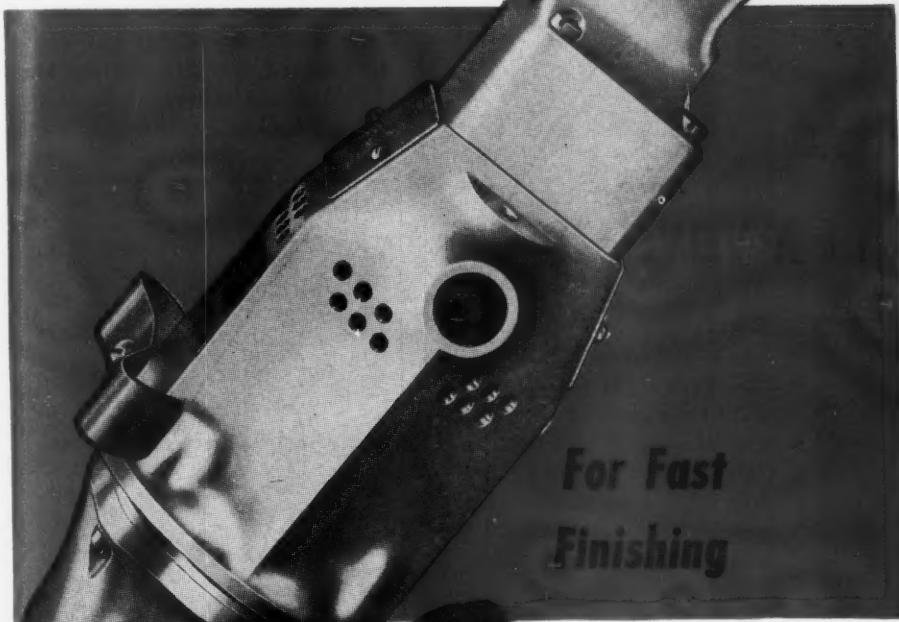
Division of The Gabriel Co.
ROCKFORD, ILLINOIS

PISTON RINGS

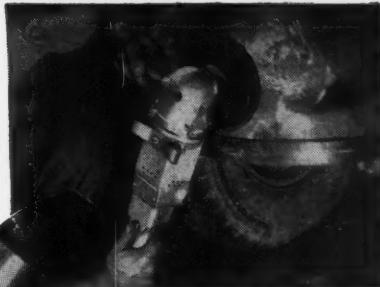
To cash in on body and fender jobs... SWITCH TO

Black & Decker

POWER!



*For Fast
Finishing*



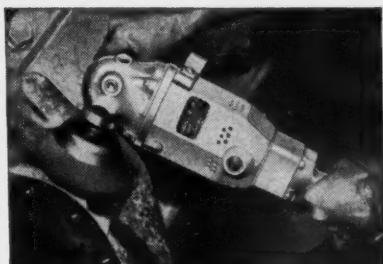
To Speed SANDING—

use a Black & Decker Sander with abrasive discs in a variety of grades.



To Speed GRINDING—

use a Black & Decker Sander with a saucer grinding wheel.



To Speed CLEANING—

use a Black & Decker Sander with a "Whirlwind" wire cup brush.

LABOR CHARGES really pile up your costs on body jobs. So it's just plain good sense to make the most of your mechanics' time by equipping for better, faster, more profitable work with BLACK & DECKER Electric Sanders! These versatile tools give you correct power and speed for better work—easier handling to turn out more jobs per day—quality construction for longer life, less tool expense!

See your nearby B&D Distributor for a demonstration of any of *four* models. Let him show you why it pays to "Switch to BLACK & DECKER POWER!" Write today for free catalog to: THE BLACK & DECKER MFG. CO., 620 Pennsylvania Ave., Towson 4, Maryland.



...use them to save time,
trouble and money!



would not be able to help him. "All right," he said. "I'll go out to have a Pow-Wow."

He took the guns and gun belt in his hands and went to call on the Big Chief. "Hello Pete," he said as he approached him.

"Name Pinto," grunted the Chief sitting cross-legged on the ground.

"Excuse me, hello Pinto." Tommy

tried to put all his best personality in his voice. But Pinto easily held the Indian's glacial calm.

"Look Chief," said Tommy. "A peace offering."

Pinto's scowl really deepened. Tommy tried several more approaches but none of them could apparently penetrate Pete's epidermis.

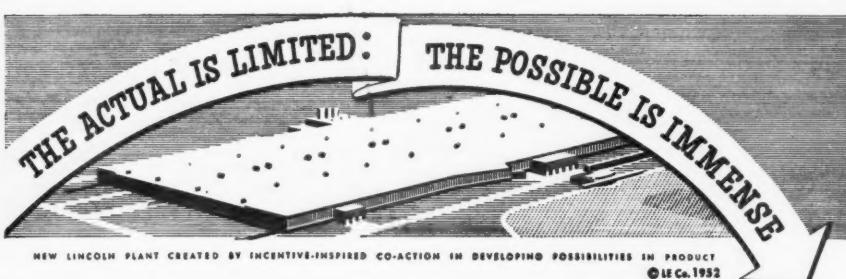
Suddenly he tried an entirely dif-

ferent track. "The high school's playing up at Green Bush, Saturday. Guess I'll have to go alone."

Caught off guard, the little blue eyes gave him a quick eager glance, then settled back into their dramatic scowl.

"Molly was going along with me," Tommy continued without looking at the seated figure. "But she couldn't at the last minute. I thought I'd find some boy who would like to go up there. Know of anyone?"

Clearly the Chief's canoe was about to sink. But Tommy knew better than to push his advantage too hard. He waited for a full minute then said, "Oh well, I'd better be getting to work on that car. Can't wait here all day you know." He dropped the guns in the small boy's lap and strayed quickly over to the Parsons' car.



RUGGED WELDER WITH A VELVET TOUCH

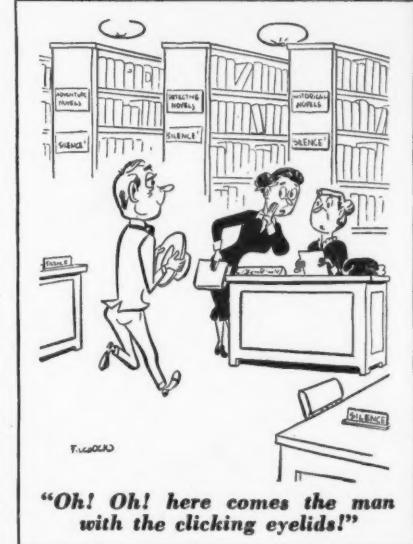


LINCOLN "FLEETWELDER" 200 AC. Built for fast, easy repairs of cars and trucks. NEMA rated 30 to 250 amps. Handles $\frac{1}{8}$ " to $\frac{1}{4}$ " electrodes.

What's next . . . A rugged job like a broken axle or a frame . . . or a light body repair with thin metal that takes special care. With a Lincoln "Fleetwelder", your repairman takes each in stride . . . gives you dependable, quality welds, in the shortest time . . . at the lowest cost.

Garage welders prefer "Fleetwelder's" easy welding. They like the way the arc starts automatically with "Arc-Booster". And they appreciate the range of amps they get with the turn of a dial. The welder is compact, portable and operates from single phase current.

Compare this welder. None but the "Fleetwelder" will give you a steady arc on $\frac{5}{64}$ " electrode for body repairs and also over 250 amps for heavy jobs—all at the lowest price on the market.



He slipped into the driver's seat and tentatively pushed the pedal with his right foot. "Hm, that's odd," he said to himself. "I thought she said the pedal would hit the floor. It's hard now."

He gave it a few hard pumps but it remained apparently hard. "Oh well, we'll take a look at it back at the shop." He started the engine.

Before he had time to throw the car into reverse, however, a small figure came racing across the yard.

"Oh, Tommy," Pinto yelled. "Oh Tommy! Wait a minute."

"What is it, Pete?" asked Tommy, smiling down at the small boy.

(Continued on page 70)

THE LINCOLN ELECTRIC COMPANY
DEPT. 302 CLEVELAND 17, OHIO

The World's Largest Manufacturer of Arc Welding Equipment



It's New

MODEL V-9812

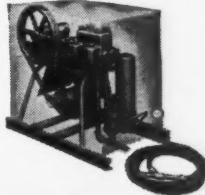
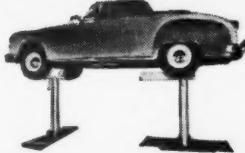
Curtis AIR COMPRESSOR

15 H. P.—TANK MOUNTED TWO-STAGE—AIR-COOLED

Features that make the V-9812 truly outstanding:

- 1. Two-Cylinder Compressor — less friction and less oil consumption.
- 2. Vibration Free — smooth operation
- 3. Self Oiling by positive Centro-ring method
- 4. Timken Main Bearings — provide easy external adjustment
- 5. Four section Finned Intercooler — effective cooling between stages
- 6. 120-gallon ASME — Air Tank — Automatic Electric Weld. 200-lb. pressure
- 7. Automatic Start and Stop Control, with positive vacuum-type starting unloader
- 8. Precision Built — assures long life and minimum maintenance
- 9. Experience — Backed by 98 years of "Know-How"

Other CURTIS Equipment Known for Quality and Dependability



CURTIS FULL HYDRAULIC TWO-POST SHOP LIFT—for Passenger Cars, Trucks and Busses

HYDRAULIC CAR WASHER (300 Pounds Pressure)

For better and faster car washing; more cars are washed per day — more profits for you.

See your CURTIS jobber or use this coupon . . .

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company
1946 Kienlen Avenue, St. Louis 20, Missouri

I am interested in items checked:

AIR COMPRESSORS AUTO LIFTS (Single Post) Two Post
 POWER CAR WASHERS

Name.....

Firm.....

Street.....

City..... Zone..... State.....

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company
1946 Kienlen Avenue • St. Louis 20, Mo.

Pop O'Neill Continued from Page 68

"If you happen not to find anyone to use that other ticket, I wouldn't want you to be all alone."

"Well, I don't know," Tommy countered. "I could hardly take an Indian to a football game. Think of what people might say, going around with a be-feathered creature like that beside me."

"Well," said Pinto, taking off his

head-dress slowly. "I guess I could leave the head-dress home."

"Oh I don't know," said Tommy. "I should think you'd have to wear regular clothes like everyone else to a football game."

"I have some regular clothes," said Pete. "If my mother would let me put them on."

"I think she would," Tommy re-

plied gravely. "And one other thing, "Tommy pressed his advantage. His glance fell on the two shining pistols in the boy's hand, which he had not dropped in his haste to get to the car. "Before I could take you to the football game I'd have to be sure that you'd written a thank you letter to your grandmother. Those pistols cost a lot of money you know."

"Oh sure," said the little fellow. "They're nice guns really. You know Tommy," he looked up like a small philosopher, "there's nothing wrong with this cowboy stuff. It's just that I get fed up with it. It's all grown-ups think of! Turn on the television . . . what is it? Hop-a-Long Cassidy! Turn on the radio . . . what is it? Gene Autry, Roy Rodgers! Pick up the funny papers . . . what is it? More cowboys! Whenever grown-ups buy you anything, what do they get . . . cowboy boots, cowboy shirts, cowboy hats. I want something else besides cowboys. I'm no grown-up."

"Is it any better to be interested in just Indians?" countered Tommy.

"I suppose not," said Pete. "But at least you can be a little bit the way you want to. I like to be a little bit cowboys, a little bit of Indians, a little bit of space patrol, and quite a bit football," he concluded.

"That's not a bad idea," Tommy said. "That's what I'd like to be. A little of everything. Well you go tell your Mom while I get this car fixed. Pop O'Neill's probably waiting for me and I have to get back

(Continued on page 80)

**NOW... greater
SERVICE PROFITS
are guaranteed--**

**OPERATOR
TRAINING
DOES IT!**

Your dynamometer operator can now become an expert . . . by attending the Clayton Dynamometer Operator Training School for one week. An intensive 5-day course covers every phase of dynamometer operation . . . trouble-shooting, tune-up, inspection and performance checking . . . guarantees profitable operation. A class starts the second Monday of each month at the Detroit school, located at 4620 Oakman Blvd., near Chicago Blvd. Another class starts the third Monday of each month at the Clayton factory in El Monte, Calif. Courses at both schools are identical . . . streamlined to teach proved dynamometer techniques selected from the best of hundreds of successful operations. Enroll your operator or service manager and insure greater service profits. Mail the coupon to the nearest address for complete information.

Clayton
CHASSIS
DYNAMOMETER

CLAYTON MANUFACTURING CO. (USE NEAREST ADDRESS) MA-10
4620 Oakman Blvd., Detroit 4, Mich., or Box 550, El Monte, Calif.

Send complete information on Dynamometer Operator Course at school checked. Also send new book on dynamometer operation.

DETROIT SCHOOL () EL MONTE SCHOOL ()

NAME _____

FIRM _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____





Get Your Share of the Big Car Radio Market!

OFFER THE FINEST NAME AT THE LOWEST PRICE!

NEW **Motorola**
car *Golden Voice*
radio

EASY TO SELL
EASY TO STOCK
EASY TO INSTALL



\$39.95

all in one
model 401A

There are few men in business today with the opportunities a Motorola dealer has before him—a staggering potential, a name that is synonymous with car radio, a price that is the lowest in the market!

Yes—there are over 13,690,000 radioless cars on the highways today!—That is your market—ripe this election year, as never before, for news at the car owner's fingertips! And you can offer that market a Motorola radio at a sensational low price—just \$39.95!

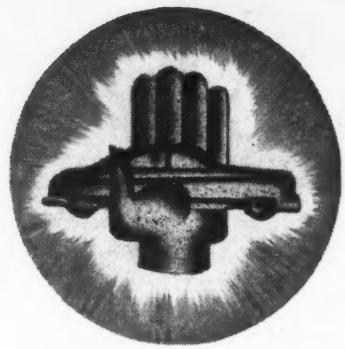
Offer a 4-Way Choice of Installation

Car and truck owners can choose the power and tuning they want—now you can offer a choice that makes selling easy:

1. **deluxe custom set**
2. **golden-voice custom set**
3. **deluxe custom set with push button**
4. **golden-voice custom set with push button**

See the Motorola complete line of car and truck radios at your distributor's now while the selling time is hot!

KICK OUT
YOUR OLD
KLUNKERS!



WALKER
leads in
JACKS



WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WIS.

... REPLACE THEM WITH
**WALKER
 GREYHOUNDS**

**Featuring the finest
 Hydraulic Power Mechanism
 ever developed for Service Jacks**



Take hold of the finger-fitting *Pistol Grip* handle on a new Walker Deluxe Greyhound and swing it into action. See how a slight pressure on the handle tilts the jack for easy, speedy positioning. Notice how its sleek chassis is built to duck under long, low overhangs and low-slung axles.

With the handle locked in any of the convenient positions, bring the rugged *Giant Saucer Lifting Cap* into contact with the vehicle. All it takes is a few quick strokes of the *Silent Speed Booster Pump*. Then watch the *Gold Seal* Hydraulic Power Unit go to work, raising the entire end quickly, easily—and safely. Look down under. There's plenty of working space for any undercar job.

Want to dolly the vehicle? It's easy—with the Greyhound's *Full Radial Thrust* Casters and over-size front wheels. And Walker Greyhounds are built to take it! Exclusive *Straight Line* Drive eliminates side strains on the power ram which might cause leakage. The Automatic *Overload Safety Valve* prevents accidents and injury from overloading.

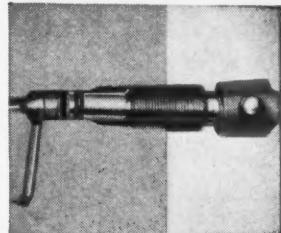
Yes, Walker Deluxe Greyhounds are the finest combination of jack values your dollars can buy. Kick out your worn-out, time-killing, profit-stealing Klunkers. Go modern—with Walker Greyhounds!—America's greatest hydraulic Service Jacks, engineered to meet all of the demands of present day service.



New "I.S.D." power cylinder—Greater wear resistance and a more positive seal between cylinder wall and cup leather mean longer jack life . . . smoother, trouble-free operation.



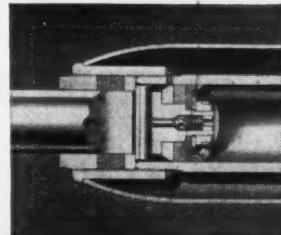
New self-centering finger tip control—Ingenious control mechanism prevents valve seat wear and eccentric binding. It's leak-proof and trouble-free, provides more accurate control of lowering.



Tolerance .0015" precision ground reciprocating parts—Wear from reciprocating parts reduced to minimum through centerless grinding to a tolerance of .0015"—further assurance of long, safe, trouble-free service.



New filtered "Hydra-matic" relief valve—A far reaching development in modern hydraulic jack construction, this new valve eliminates cup washer scoring—one of the most frequent causes of jack failure.



... Serving the Automotive World with Jacks, Lifts, Silencers and Oil Filters

... "so help me heads off with

Another amazed user reports on the speed
and efficiency of Walker Super Kwick—
sensational rust-busting compound



EASY AND PLEASANT TO USE

CONTAINS NO KEROSENE, ETHER

WALKER MANUFACTURING COMPANY

I pulled those my bare hands!"

"The other day I had to replace the head gaskets on an old model with aluminum heads. They were corroded on so bad that the head pullers we use would not even loosen them.

"I had a can of *Super KWICK* that I bought while on my vacation. I put a few drops on each stud and let it set for 20 minutes and so help me, I pulled those heads off with my bare hands. I wish I could tell you how much I appreciate having *Super KWICK* on hand at all times."

P.S. (by Walker) You, too, will appreciate having *Super KWICK* on hand at all times. Get yours today!

Try it for speed! Sell it for profits!

WALKER *Super KWICK*

America's fastest, most efficient rust-busting compound—for all automotive, industrial, home and agricultural needs.

Economical to use, profitable to sell.



... NO OBJECTIONABLE ODOR

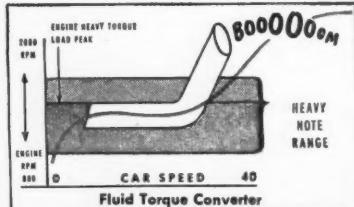
ALCOHOL OR HARMFUL ACIDS

OF WISCONSIN • RACINE, WISCONSIN

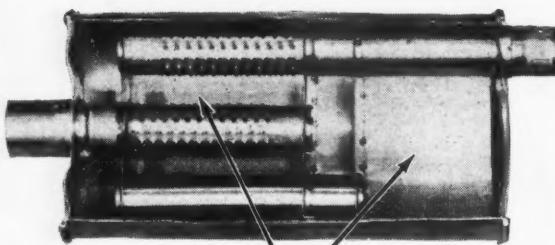
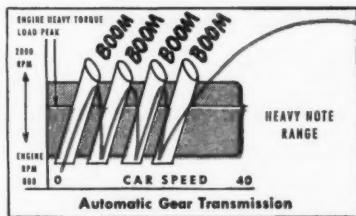


The Race for ...AND WITH "PRECISION" OF THE EXHAUST SYSTEM

"PRECISION TUNING" SOLVES THE AUTOMATIC TRANSMISSION PROBLEM

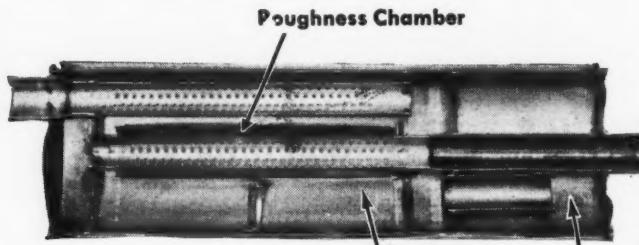


When operating at high torque (1200-1600 rpm) from 0 to 40 mph, the fluid torque converter transmission usually causes the engine to run at an approximately constant speed. This produces a sustained heavy power note. The automatic gear transmission as it passes through its gear changes creates multiple heavy power note peaks. Both are specifically controlled through Walker "Precision Tuning."



Unique design of Tuning Chamber with Volume Passage greatly reduces "Torque Converter" BOOM.

NOTE DOUBLE WRAPPED SHELL



Toughness Chamber
Tri-Flow design, Volume Tuning Passage, Tuned Resonator are all used to control Hydramatic Type Transmission "BOOM — BOOM — BOOM."

NOTE ASBESTOS AND COVER



For the millions of Fine Automobiles,
Trucks and Buses in Active Service.

Horsepower is on!

IT COMES

TUNING"

...THE ENGINEERING
AS AN INTEGRAL PART OF ENGINE DESIGN

**A New Generation of Walker Silencers Solves
the New and More Complex Problems of a
New Generation of Engines and Automobiles**

• Improperly designed mufflers are horsepower thieves! No longer can "yesterday's mufflers" meet even the minimum requirements of today's new standards of car performance and engine design.

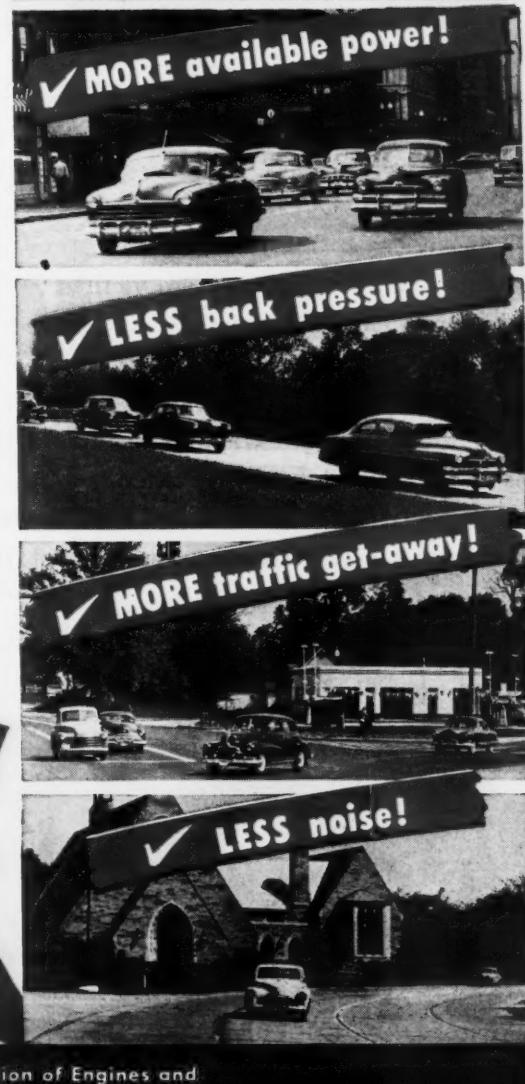
More powerful engines, more intense explosions mean: heavier power notes . . . greater tail pipe roughness . . . greater muffler body and exhaust pipe noise . . . and a greater volume of exhaust gases. More automatic operation and increased flexibility through automatic transmissions mean more critical power note peaks. Greater economy and quieter, smoother ride mean rigid back pressure limitations . . . more rigid acoustical specifications.

There is no single solution, such as "trick shell construction," to these new and complex problems. Exhaust system design is now an integral part of engine design. It must comprehend and successfully meet the entire broad front of new engine performance.

To meet these new requirements, Walker offers its newest, most important development of all—*Precision Tuning*—a new generation of Walker Silencers to meet the new and more complex requirements of the new generation of engines—now and in years to come—with Walker "Individual Tuning" for the millions of "other generation" vehicles now in service.

WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WIS.
Exhaust Silencers • Jacks • Lifts • Oil Filters

WITH "PRECISION TUNING"
YOU GIVE YOUR CUSTOMERS...

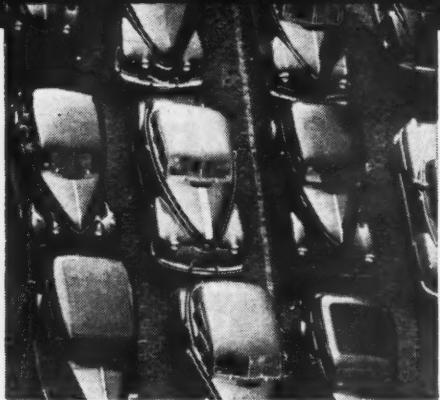


"PRECISION TUNING"

For the New Generation of Engines and
Automobiles—Now and to Come.

LUBRICATION AUTHORITIES AGREE:

"Cold-Engine" Driving leads to EXCESSIVE OIL CONTAMINATION



9 out of 10 of your customers
are "Cold-Engine" drivers
They need the Total Protection of
WALKER OIL FILTERS

- Lubrication authorities agree: average drivers—more than any others—are hardest of all on their oil and their engines. They are the starting, stopping, slow-speed, "Cold-Engine" drivers who expose their engines to maximum "combustion blow-by" summer and winter. They are victims of excessive oil contamination.

That's why the average driver—the "Cold-Engine" driver—needs the *total protection* of a Walker Oil Filter most of all. Walker is the filter which acts as an ideal working partner to modern oils.

Walker patented "Laminar" construction gives positive "3-way" protection against dust, dirt and

abrasives. Walker also recognizes and acts against the threat of water, greatest enemy of motor oil and good lubrication. Because of the unusual ability of wood cellulose fibres, the Walker Oil Filter *selectively removes water from the oil* . . . helps check sludge formations by keeping the moisture content of the oil below the critical "sludge danger zone." It also minimizes acid wear by absorbing the acids contained in the water removed from the oil.

Regardless of the amount of driving your customers do, give them total oil protection by installing Walker Oil Filters or Walker Replacement Cartridges.

WALKER OIL FILTERS

WITH PATENTED *Laminar* CONSTRUCTION

WALKER MANUFACTURING CO. OF WISCONSIN, RACINE, WISCONSIN

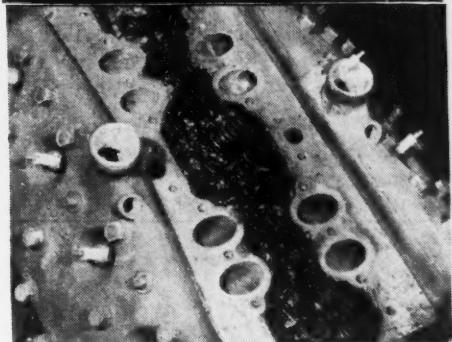
Oil Filters • Exhaust Silencers • Jacks • Electric Lifts



WHAT THE ENGINE PUTS IN-
WALKER TAKES OUT!

THE ENGINE PUTS IN-	WALKER TAKES OUT!
Moisture . . . from "combustion blow-by." Water in the oil is the basic source of sludge—1% moisture puts the average crankcase in the "danger zone" of serious sludge.	✓
Acids . . . from combustion fumes. Highly acidic "blow-by" fumes condense in the presence of moisture, create corrosive crankcase acids, the major cause of engine wear. Water in the oil is the "carrier."	✓
Road Dust and Dirt . . . from engine breathing. Gritty dust is always present in the air—in cities as well as on the open highway. It finds its way into the crankcase.	✓
Carbon Soot and Lead Compounds . . . from combustion of modern gasolines. These contaminants "blow-by" into the crankcase where, in the presence of other solid contaminants and moisture, they form sludge.	✓
Metal Particles . . . from engine wear. Tiny pieces of abrasive metal are always being put into the oil by engines, particularly when new. Once in the oil stream, they scratch and damage vital engine parts.	✓

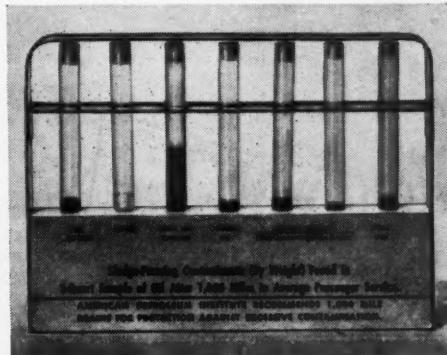
Here's Why YOUR CUSTOMERS NEED WALKER OIL FILTERS



Walker Checks Engine-Clogging Sludge Formations by removing water from the oil. Water in combination with solid contaminants creates a pasty, mayonnaise-like condition which is the starting point of sludge.



Walker Checks Corrosive Acid Wear. Highly acidic "blow-by" fumes condense with crankcase moisture to form wear-producing acids which wash past the pistons. Walker removes water—absorbs the acids it contains.



Walker Gives Total Oil Protection because Walker removes the major oil contaminants. Walker takes out harmful water as well as dust, dirt and abrasives—prevents excessive oil contamination . . . preserves the detergent-dispersant properties of modern H. D. oils.

to work. You tell your Mom you're coming with me on Saturday afternoon."

"Okay, Tommy," said the little fellow. Experimentally he pulled the two pistols from the holsters. "Bang, bang," he said. "Woops, two flat tires in front there, Tommy. Fix 'em up while you're at the garage."

Tommy waved a hand as he disappeared up the street. As soon as he got to Pop O'Neill's he drove the car into the back room. He explained the trouble to Larry.

"Was she doing much driving?" asked Larry.

"Oh, yes," Tommy said. "She drives her husband to work and that's way across town, almost into

the city. Traffic is pretty heavy that time of day. She said that just before she got home the pedal got spongy and she was afraid her brakes were going completely bad."

"That's a snap. Bad master cylinder. Just put a new one in. That'll take care of it."

He got a new master cylinder and flushed out the system thoroughly before installing it. When Tommy delivered the car, Mrs. Parsons wasn't home so he left it in the driveway.

First thing the following morning, however, the phone rang and Tommy picked up the receiver. It was Mrs. Parsons.

"One of your jobs came out fine, she exclaimed, "Pete is his old self again, but the car certainly isn't. The pedal went soft again today!"

"I thought we'd fixed that one yesterday," said Tommy, "or I wouldn't have brought it back."

"I'm sure of it," said Mrs. Parsons. "But I don't want to get into an accident."

"Of course not," Tommy agreed. "I'll get the car right now."

When he brought it back to the shop, Pop O'Neill was waiting for him. "Larry says there is a come-back on that brake job yesterday. What's the matter?"

"Darned if I know," said Tommy. "Put in a new master cylinder and flushed out the whole system. It was working fine when I left here."

Pop thought a minute. "Did you say the brake was soft yesterday morning when you went to get the car?"

"Mrs. Parsons said it was soft when she got back from taking her husband to work. But when I drove the car over here it seemed all right to me."

"How's the exhaust system?" Pop inquired.

"No leak," said Tommy. "Remember, I checked it. Remember that Chevrolet that came in where the hole in the exhaust was opposite the hydraulic line causing the fluid to heat up. I remembered that one and I didn't want it to happen on Parsons' car too. No the exhaust system is fine."

"Hop out, Son," said Pop. "Let me go for a ride. This one will take skill, experience and finesse."

(Continued on page 82)

cheap brake fluids are expensive

Consider your reputation! Consider the safety of your customer! You never save money on cheap brake fluids. So, why take a chance when you can standardize with EIS. Come-backs are costly. It COULD make the difference in your next cylinder job!!!

EIS BRAKE FLUIDS meet or exceed SAE specifications. EIS BRAKE FLUIDS work perfectly under any climatic condition—and they mix with all top-quality fluids.

SUPER "40" (moderate) is recommended for all light-duty passenger cars only. (See "DON'T" Below)

SUPER "50" (heavy duty) is recommended for all passenger cars, Trucks, Buses, Tractors and Taxis.

EIS AUTOMOTIVE CORP.
Middletown, Conn.

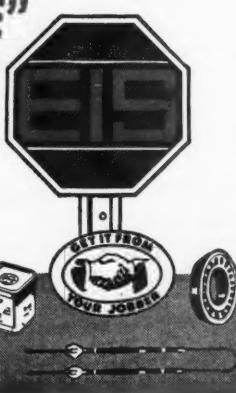


**"ECONOMIZE"
WITH**

NOW AVAILABLE...
New Merchandisers
New Valves
New Kits

Ask your Jobber
or write us direct.

• CABLES
• FLUIDS
• PARTS
THE BRAKE PARTS LINE
• KITS
• TOOLS
• CYLINDERS

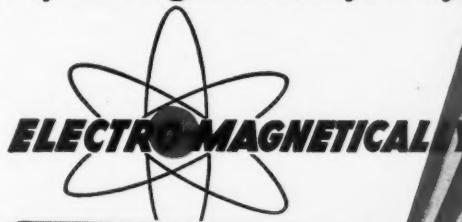


the **NEWEST** advancement
in the science of wheel alignment

the NEW "BEAR"

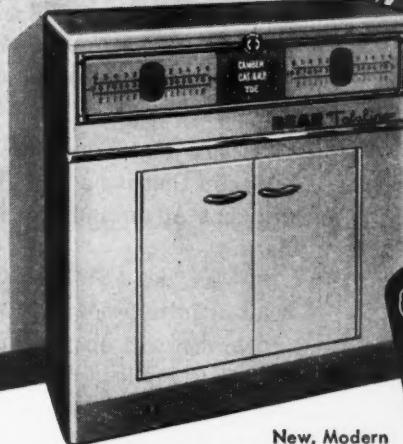
Telaliner

all steering and alignment troubles
are exposed right before your eyes!

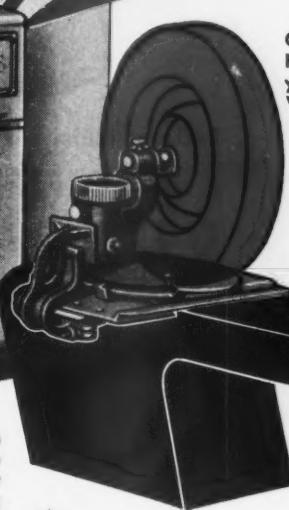


BEAR Telaliner

WHEEL ALIGNMENT SEP



New, Modern
Cabinet Design Adds Beauty to
Your "BEAR" Service Department
... with or without Merchandising
Background!

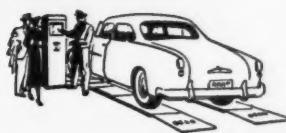


Complete Merchandising
Program Available to help
you sell the hottest idea in
Wheel Alignment History!



ACT NOW—See Your Jobber for
Complete Details about the New "BEAR"
Telaliner or Write for New Telaliner
Bulletin!

"BEAR" Telaliner



BEAR MFG. CO., DEPT. M-1, ROCK ISLAND, ILLINOIS

Re102

gives you the **NEWEST**
way to sell alignment services

Screens All Cars for Steering Mis-Alinement as
your Customers See It!

Operator reads Screen and makes Adjustments
without getting out from under car!

Checks Caster, Camber, Kingpin, Turning Radius
and Toe Electrically!... Both Mechanical and
Electrical readings can be made at the same time!

Readings are MAGNIFIED on Tell-All Screen
which requires no High watt, Expensive
Projection Tubes!

Sells Itself because it's NEW... it's Novel
... it's Electrically Accurate, Sturdy, Dependable
and unaffected by temperatures!

Alignment Checked from either Wheel Rim
or Spindle... Quickly Adaptable to
Present Equipment!

Stamps your shop as up-to-date with the latest,
most scientific equipment—Helps sell your
other "BEAR" Services!

Some time later Pop came back. "How does it act?" asked Larry. "Okay?"

"Sure does," said Pop. "The pedal went spongy just before I got back here. It's just as Mrs. Parsons said. It was fine when I started out but after awhile it went soft."

"Oh don't kid us Pop," said

Larry. "When they're fixed, they're fixed, and I fixed that one right."

"Larry," said Pop, "do me one favor. Crawl under there and feel that stop light switch."

Larry gave him a quizzical look but crawled under. Suddenly he let out a yell. "Wow," he said, "is that ever hot."

"Just what I figured," Pop grin-

ned at Tommy. "Bad switch. Not a dead short but the next thing to it."

"I get it," said Tommy. "The switch heats up and causes the fluid to boil. Then the pressure goes down."

"Yes," Pop agreed. "It just happened that the short wasn't completely dead. And when the fluid returned to normal temperature, the pressure went up again."

"How did you ever figure that one out?" said Tommy admiringly.

"Oh, it wasn't so hard," said Pop. "When you've had as much experience as I have, you find that you can think of the whole actions of a car and one by one eliminate the possible causes of trouble until only one is left." He shrugged, "This time this was it. A good mechanic, my boy," said Pop waving his finger in mock pomposity, "must have the wisdom of a Solomon, the patience of a Job and the imagination of a . . . a"

"My golly," Larry broke in, "this sounds like straight propaganda."

"All a mechanic does, Tommy," Larry continued, "is fix cars."

Pop laughed politely and did not argue the point. "Speaking of propaganda reminds me of a good Russian story I heard downtown yesterday."

"Seems Malenkov was reporting to Stalin that it had just been verified that Adam and Eve were Russians."

"Oh so," said Stalin. "Good. But what definite proof have we?"

"No one will dispute our proof," Malenkov replied. "Adam and Eve had no clothes. They had no roof over their heads. All they had to eat were apples. And they still believed they were in Paradise. They must have been Russians."

"One of your better stories, Pop," Larry put in. "No clothes, no roof over their heads, only apples to eat." He shook his head in sympathy. "Sad characters, hey, Tommy—just like us. Now, Pop, how about a raise"

But Pop had guessed what was coming and already had his fingers plugged tightly in his ears.



SMOOTHER ENGAGEMENT

The flat-top construction of the Accurate Powerflex cushion distributes the wear evenly over the entire facing surface. High-spot contacts are completely eliminated. Effective cushioning action is assured for the entire life of the plate. And this exclusive Accurate design is a vital factor in making the Powerflex engage more smoothly and more efficiently than any other clutch plate made.

WRITE FOR DETAILS



There's a New Powerflex Clutch Plate
in Every ReNu-Accurate Clutch Set



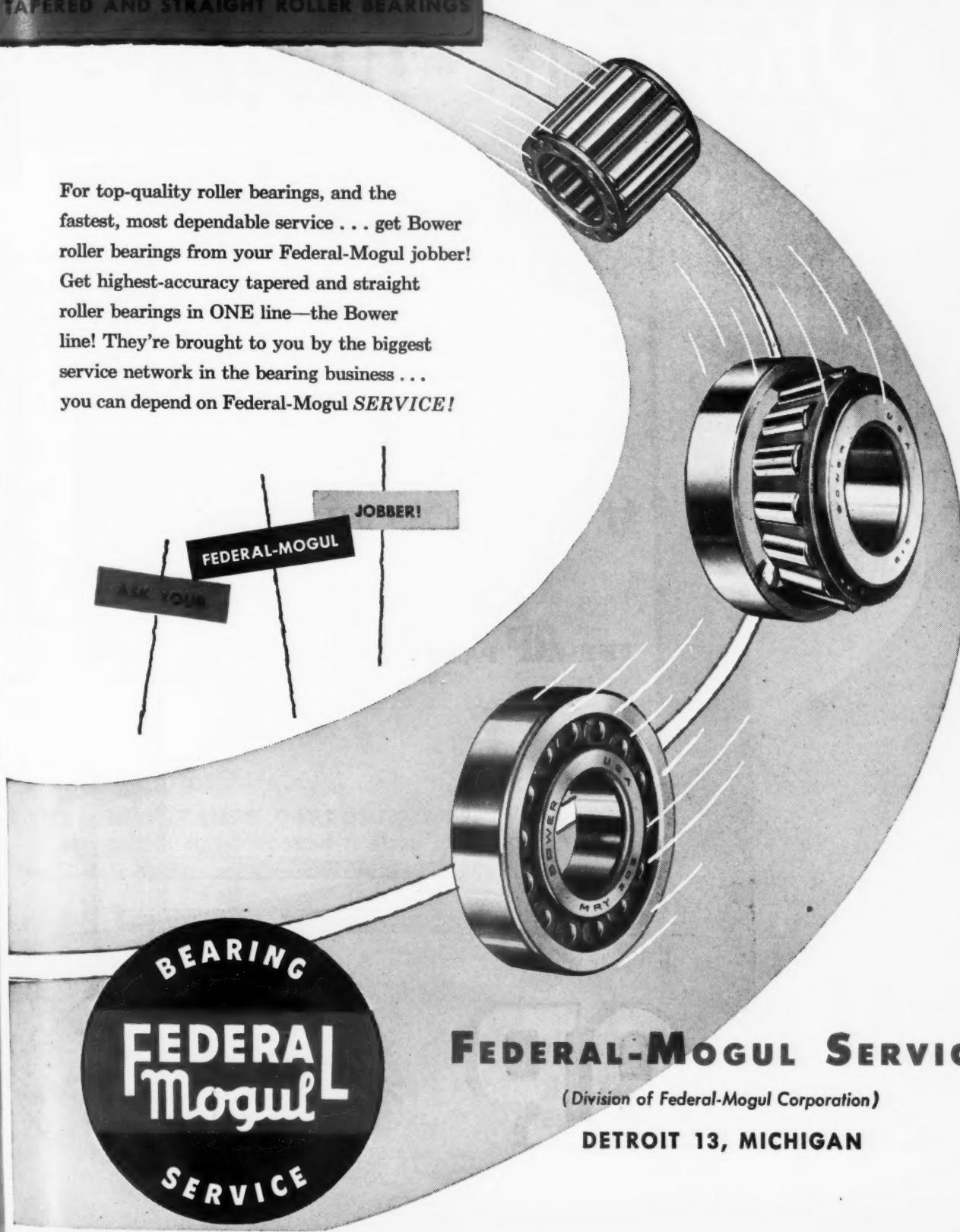
Accurate Parts Mfg. Co.
12435 EUCLID AVENUE • CLEVELAND 6, OHIO





For Fast Service on Roller Bearings

For top-quality roller bearings, and the fastest, most dependable service . . . get Bower roller bearings from your Federal-Mogul jobber! Get highest-accuracy tapered and straight roller bearings in ONE line—the Bower line! They're brought to you by the biggest service network in the bearing business . . . you can depend on Federal-Mogul **SERVICE!**



FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN

YOU can Sell Original Equipment

OLDBERG
MANUFACTURING CO.

Subsidiary of
THE AP PARTS CORPORATION

AP

Mileage Getting

AP Mufflers!

Our wholly owned subsidiary—Oldberg Manufacturing Company—has made or is making mufflers for original equipment on millions of cars including:

Pontiac • Mercury • Oldsmobile • Lincoln
Studebaker • Chrysler • Nash • Cadillac • Hudson
Ford • Packard • White • GM Truck • Divco
Reo • Federal • International • Mack

The same fine engineering and manufacturing facilities produce AP mufflers. That's why AP dealers are always sure of maximum silencing, perfect fit, quick installation and customer satisfaction.

AP
THE AP PARTS CORPORATION
1581 AP Building • TOLEDO 1, OHIO

Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123



Mufflers

Clearing House . . .

This Shop Has Poor Idle Complaints on Fords

We would like to have some information on 1951 Ford V-8 engines. Several of these cars have come to our shop with complaints of poor idle. We have done all the work such as check the compression, new points, plugs, etc. All this work has been done to the manufacturer's specifications. Several new carburetors have been installed but still there is poor idle. All the heads and manifolds have been tightened also.

H. Liebhaber,
Harry's Battery & Ignition Service,
New York, N. Y.

THIS isn't a chronic condition on these jobs as far as I know. I would suggest checking the vacuum to make sure it is up to specifications. It should read between 17 and 21 inches. Check the vacuum advance unit diaphragm on the distributor for leaks. A faulty diaphragm will cause engines to idle roughly.

Interchangeable Parts Problem on Ford Engines

I would like to find out if a 1934 Ford V-8 camshaft is different from a 1946 camshaft and if it is, just what is the difference? What will a 1934 camshaft do in a 1948 Ford motor with a set of 1950 Ford pistons?

I have a 1948 V-8 motor that I want to use in average highway driving. The motor in my car now doesn't seem to have power enough to pass other cars at 60 mph. Would shaving the heads at .040 plus cutting down the flywheel and twin mufflers, help me any? Also would any of these things shorten the life of my car?

Versal B. Treanor,
Dubuque, Iowa

THE difference in the camshafts is the way they are ground. The latter one is an improvement over the 1934 and little would be gained by going back to the 1934 type. What you will find—is in the valve lag—in the time that the exhaust opens and closes. Personally, I believe that you would lose power rather than gain it.

On your second question, on getting more power out of your 1948, I would suggest planing these heads and installing dual carburetors with dual exhaust. This would help more than anything else. As for your speed, I would suggest that you install a low gear ratio in the rear end. This will give you maximum pick-up at all speeds. I would not recommend doing anything to the flywheel. These changes would not effect the engine life to any great extent.

Half-Ton Chevrolet Truck Sticks in High Gear

I have a customer that has a 1946 Chevrolet 1/2 ton pickup that sticks in high gear. I have torn it down three times so far and in all have put in all new gears

(Continued on page 127)

wiring from the ignition switch to the "SW" terminal and replace the dash unit if it does not act as described. Reconnect the lead to the "GA" terminal and disconnect the lead from the tank unit. The gage should stay against the left stop pin when the ignition is turned off. If it indicates "full" look for a ground in the wiring between the dash and

the tank units. Ground the lead in the tank unit. If the gage does not move to the right stop pin, look for an opening in the wiring.

The above tests checked for faults in the dash unit variable field winding and for opens or grounds in the connecting wires, but did not check the constant field winding or tank unit. To test these parts con-



A soldered joint is no better than the solder used to make it. A poor grade solder often leads to a poor job . . . customer dissatisfaction . . . additional costly repairs . . . and smaller profits for you! That's why it pays to get the best solder you can buy. Buy Federated Solder and you get a tin and lead alloy carefully prepared and engineered by experienced production men under the strictest metallurgical controls.

A variety of Federated Acid Core Solders containing an active chemical flux is recommended for all automotive repair work . . . Federated Solid Wire Solders where a separate flux is desired. Available in all commercial wire sizes and compositions through your local jobber.

Federated Metals Division

AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N.Y.



nect the tank unit known to be in good condition to the "GA" terminal on the dash unit and ground the tank case. Operate the float arm manually and observe the readings. If the dash unit indications are incorrect, remove and calibrate the dash unit; while if the dash unit indicates correctly replace the tank unit. If no spare tank is available to make this check, remove the tank unit and use it for the above check. If the dash unit constant field winding is open the gage will read "full" over a large part of the float arm movement, while if the tank unit is faulty, the gage will be erratic or will not operate at all.

If the operation of the gage is erratic, it may indicate that there is interference with the pointer movement. Remove the dash unit and inspect the pointer and armature assembly. Straighten the pointer if it has been bent and rubs against the dial and frame. Check to make sure there is a slight amount of end play in the shaft and that the bearing plates have not been bent out of alignment. Make sure bearings are clean. If the adjustable bearing is loose or after adjusting the end play, apply a drop of air drying varnish to prevent the bearing from turning. Later gages do not have this adjusting bearing screw, the shaft being held in position between the bearing plates, the upper one being loose and held in place by the dial screws. In no case should varnish be applied to this type of bearing and adjustment is not necessary.

(Continued on page 88)

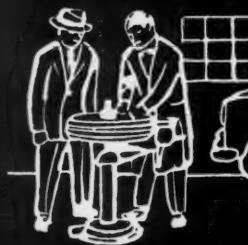


John **BEAN** **PECO**

SKID-DEFIER*



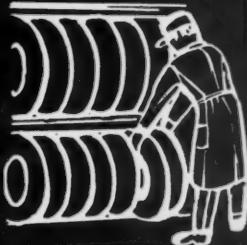
GARAGES



Sell "Skid - Defier" service with brake, alignment, balancing or tire repair jobs.

TIRE DEALERS

Convert conventional new tires to safe, longer wearing, "Skid-Defied" tires.



*EARN New PROFITS
WITH TIRE DE-SKIDDING*

GET FULL INFORMATION FROM
YOUR JOHN BEAN JOBBER

WHEEL ALIGNERS AND CORRECTION TOOLS
TOOLS • WEIGHTS • STEAM CLEANERS

TRADE MARK

NEW CAR DEALERS

Make tire de-skidding an extra value on every new car.



SERVICE STATIONS



Suggest de-skidding service with every tire and lubrication job.

RECAPPERS

Add sales appeal to your recaps by "Skid-Defying."



JOHN BEAN DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING 4, MICHIGAN



- WHEEL BALANCERS AND BALANCING
- CAR WASHERS • HEADLIGHT TESTERS

in
ni
nd
at
ad
ns
ate
ash
the
is
re
for
nit
the
ge
nt,
the
op

is
ere
ter
nit
ma
the
and
ame.
s a
the
ates
gn-
are
g is
end
ing
rom
ave
the
een
one
the
ould
e of
not
88)

re

1952

Fuel Gages Continued from Page 86

To calibrate the dash unit, remove it from the panel and mount it in the same position. Check to make sure the pointer turns easily and returns to the left hand stop from any position. The pointer should return promptly and have a very slight bank against the stop.

Connect the "SW" terminal on the dash unit to one battery terminal and ground the dash unit frame to the other battery terminal. Connect the tank unit to the "GA" terminal and connect the tank unit case to the battery ground terminal. Place the float arm in the "full" position (against the upper stop) and turn the right hand pole shoe so that the pointer just indicates "full." Place the float in the

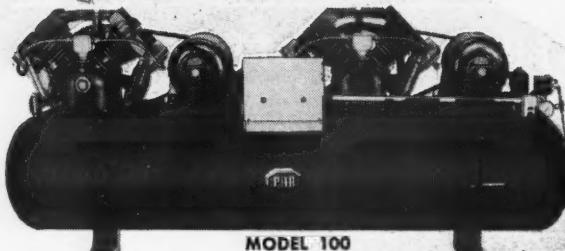
nal and ground the dash unit frame to the other battery terminal. Connect the tank unit to the "GA" terminal and connect the tank unit case to the battery ground terminal. Place the float arm in the "full" position (against the upper stop) and turn the right hand pole shoe so that the pointer just indicates "full." Place the float in the

"empty" position (against the lower stop) and turn the left hand pole shoe to give the correct indication. Repeat this process at the "full" and "empty" positions until no change is necessary. To rotate the pole shoes pry on the "U" shaped lug on the top edge of the shoe as shown in Fig. 7. Check the indications at the "full," "half full" and "empty" positions. When calibrating it may be necessary to spread or reduce the upper pole shoe to increase or decrease the air gap between the pole and armature. After all the adjustments are completed, apply a drop of air drying varnish to each pole shoe to prevent slipping.

When installing the gages in the panel or tank be sure not to bend the pointer or arm. Have all the gaskets in place and check for possible binding caused by distorted panel or by improper assembly.

The thermal type dash unit as illustrated in Fig. 3 has two bi-

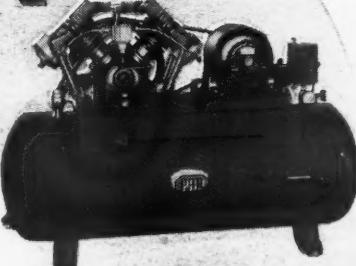
Look to PAR for air power!



MODEL 100



DELAYED
STARTING
CONTROL



MODEL 50



MODEL V-50



MODEL 15

BY COMPARISON — YOU'LL BUY PAR



PAR
AIR
COMPRESSORS



PAR
REFRIGERATION
COMPRESSORS



WRAP-O-MATIC
CANDY & COOKIE
WRAPPING
MACHINES

LYNCH
CORPORATION
PAR COMPRESSOR DIVISION
TOLEDO, OHIO



MORPAC
PAPER
PACKAGING
MACHINES



MORPAC
BUTTER & OLEO
PACKAGING
MACHINES



Glass Forming
Machines



"Ever notice how a new man always seems to get the toughest sales territory?"

metal strips that are wound with heating coils and two bimetal strips without coils that compensate the unit for external temperature and also protect the coils from overheating. The heating coils are wound around the strips that actuate the pointer and are welded to the strip at the lower end. The other ends of the coils are connected to the terminals marked "1" and "2" respectively. The left bimetal strip has a set of contact points at its lower end which are held together by the coil spring below the hinge pivot. The right

(Continued on page 90)

ALCOA LO-EX Means Fast-Selling Pistons!

The word's gotten around repair shops . . . it's ALCOA LO-EX*. And, for good reason. When you install replacement pistons of ALCOA LO-EX . . . you're giving your customers the best in pistons.

The ALCOA LO-EX trade-mark stands for complete piston dependability. It means the piston design has been scientifically tested for strength, fit and performance. ALCOA LO-EX alloy is tough, light in weight, low in expansion. Pistons will run cool, deliver full power, save gas and oil for your customers.

For complete customer satisfaction, always stock aluminum pistons of ALCOA LO-EX alloy—cast by Alcoa, finished by expert piston makers.

ALUMINUM COMPANY OF AMERICA

1855K Gulf Building • Pittsburgh 19, Pa.



"SEE IT NOW" with Edward R. Murrow—CBS-TV every Sunday . . . brings the world to your armchair. Consult your newspaper for local time and channel.

Piston Castings of Every Type



T-Slot



Trans-Slot



Strut



Trunk Type



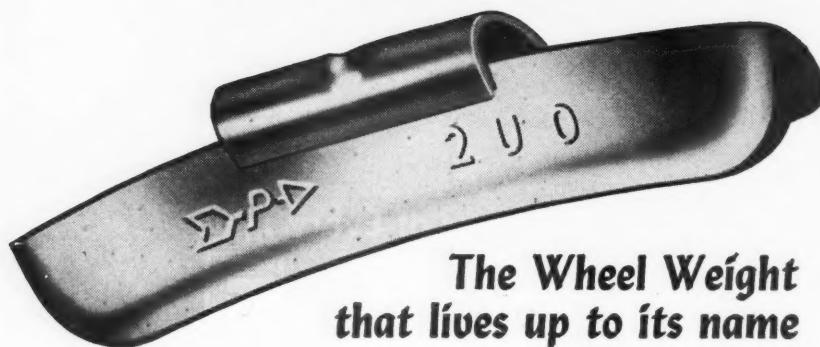
* Availability may be limited by military needs for aluminum.

ALCOA® LO-EX C



...Where
BALANCE
is needed!

►PERFECT►
WHEEL WEIGHTS



**The Wheel Weight
 that lives up to its name**

● "U" TYPE

A favorite in the industry. Fits ALL rims having factory trim rings except late model Cadillacs.

● "C" TYPE

The "C" type weight (new style) in six sizes will give most satisfactory results on passenger cars with "K" or "L" type rims.

● "SPECIAL" TYPE

Made for late model Cadillacs with hub caps covering entire wheel, except 1951 model for which "C" type weight is recommended. 6 sizes.



PERFECT EQUIPMENT CORP.
 804 W Morgan St. KOKOMO IND. P.O. Box 706

Manufacturers of Wheel Weights for Trucks and Passenger Cars

Fuel Gages

Continued from Page 38

hand bimetal is held stationary at its lower end by an insulating stop.

The internal and external connections of the thermal type fuel gage with its corresponding tank unit are shown in Fig. 1. This type tank has two terminals that are marked "1" and "2" and are connected to the terminals on the dash unit which have the same markings. Both ends of the resistance are insulated while the ground connection is made through the sliding contact. Movement of the float arm varies the resistance and therefore the current in the two heater circuits. The amount of bending of the two bimetal strips depends upon the current in the heating coils. This bending causes the lower end of the strips to grip the pointer and move it into position.

The two outer bimetal strips are assembled so that any external temperature change causes the hinges to rotate slightly and move the strips that actuate the corners so that the pointer is held stationary. If the pointers become overheated, the excess bending of the strips rotates the left hand hinge slightly and opens the contact points. Cooling begins immediately and the coil

(Continued on page 92)

ON A "WHISTLE STOP"
 YOU'LL WIN, TOO, WITH
**SOUTHERN
 FIBER BLOCK**



SOUTHERN
 FRICTION MATERIALS CO. - CHARLOTTE, N.C.

at
op.
on-
fuel
ank
ype
are
on-
ash
ngs.
in-
on-
con-
arm
ore
cir-
of
pon
oils.
end
nterare
tem-
nges
the
s so
ary.
nted,
s ro-
ghtly
Cool-
coil
92)

first with the finest

CLEVITE* 77

**runs wetter to
lengthen
bearing life**

THE "unfinished" looking finish of a Clevite 77 bearing is an achievement—not a mistake. The problem was to produce a bearing that gave unequalled service life under severe operating conditions. To accomplish this, the most excellent surface action was required—the maintenance of a uniform oil film under conditions of engine overload—lugging and overspeed.

Hundreds of hours of experiment and test were required to develop the lusterless, satin finish you now see on Clevite 77 Bearings. Examine this finish—it accomplishes exactly what was sought.

Clevite 77 Main and Connecting Rod Bearings for replacement use are furnished under our Monmouth Brand and only for applications where engine manufacturers' specifications call for Clevite 77.

*The words Monmouth, Clevite and Micro are registered trade marks of The Cleveland Graphite Bronze Co.

**THE CLEVELAND
GRAPHITE BRONZE CO.**

Cleveland, Ohio.



COB FIRSTS: The development of continuous strip casting, 1929—thinwall babbitt lined steel-backed bushings, 1931—continuous casting of copper lead on steel strip, 1934—tri-metal bearings, 1938—Micro* Bearings, 1939—Clevite 77, 1944—and others which have helped to revolutionize the lined bearing industry.

Fuel Gages Continued from Page 90

spring closes the contacts, causing only a very slight movement of the pointer.

With the thermal type gage it is sometimes necessary to add a radio resistance unit assembly so that the radio interference due to operation of the gage contact points is eliminated. This resistance fits over the gage terminal studs and is installed

before the wire terminals are in place.

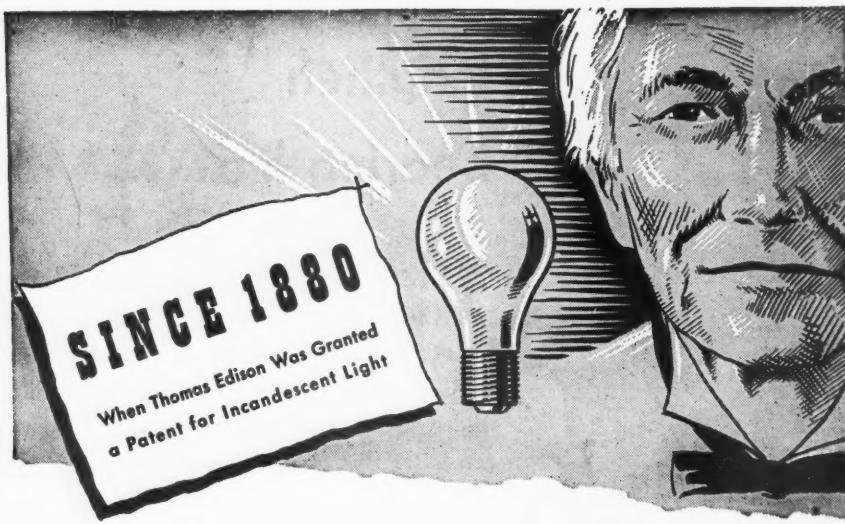
If the gage does not give an accurate indication of the amount of fuel in the tank, check to locate the trouble as follows:

Disconnect the leads from the No. 1 and No. 2 terminal on the dash unit and turn on the ignition. Ground the No. 2 terminal and

allow approximately one minute for the gage to reach its indication which should be above the "full" position. Ground both the No. 1 and No. 2 terminals and the gage should return slowly to the "half full" position. If the dash unit does not operate correctly remove it for a complete check and adjustment. If the dash unit operates correctly reconnect the leads to the terminals and disconnect the leads from the tank unit. Repeat the above test by grounding first the lead that was connected to the No. 2 terminal on the tank unit then by grounding both leads. If the indications are not as described it indicates a grounded or open lead which should be repaired. By elimination, if the gage operates correctly in the above two tests, the tank unit can be regarded as the cause of the original inoperation. When reconnecting the leads to the dash or the tank units be careful not to interchange them as this would reverse the indications.

Erratic or incorrect indications may be caused by a loose connection or a ground in the wiring or terminals while a fluctuating pointer is usually caused by dirty contacts in the dash unit. Sticking pointers may be caused by a bent pointer or frame or by interference between the gage and the panel. Re-

(Continued on page 94)



TUTHILL has specialized in the manufacture of top quality SPRINGS

There's more than steel and 70 years of EXPERIENCE in Tuthill Springs. There's more than QUALITY . . . the finest alloy steel obtainable, heat treated for greater strength and longer life. There's also PROFIT in fast turnover for a product that is constantly in demand because it's dependable and priced right. And now there's even more . . . MOLYBDENUM DISULPHIDE (MoS₂), the newest Tuthill extra that keeps springs from squeaking and galling. What's more, Tuthill Springs are "Moly Disul" treated at no extra cost!

Ask your Jobber for a FREE copy of our latest Car Application Wall Chart.

TUTHILL SPRING CO.
760 W. POLK ST. CHICAGO 7



"He certainly is a hard worker and a clumsy one, too."

FOR GREATER SALES-BUILDING OPPORTUNITY!

Sell the
**MIGHTIER
DELCO
BATTERY**



EVERY DELCO BATTERY HAS THESE FEATURES!

MAXIMUM STARTING POWER! In life performance tests, Delco batteries showed maximum starting power, after months of operation.

NEW SUPER-QUICK STARTS IN COLD WEATHER! Exclusive, patented "expander" formula used in making negative plates for batteries produces greatly improved action in cold weather.

NEW BATTERY RUGGEDNESS! Exclusive high temperature vapor treatment of plates creates stronger, longer-lasting bond . . . insures greater resistance to shock and distortion.

NEW "BALANCED" GRAVITY RATING FOR FINEST PERFORMANCE! The new "balanced" gravity rating of Delco batteries assures users of longer battery life. Extra battery life means extra miles per battery—more value for your money.

"TAILORED" CASES! Delco has "tailored" cases for each battery model. Special sealing compound to prevent cracking and leaking. Visual filling device for instant servicing.

DELCO BATTERIES

A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

It's easy to sell the mightier Delco because Delco is the preferred battery . . . the No. 1 choice of car engineers. Delco meets the needs of modern driving with mightier starting power and offers performance in balance with modern automotive electrical systems. Check the Delco features listed here and you, too, will see why Delco offers greater sales-building opportunity. Delco batteries are available everywhere through Delco battery distributors.

ACCEPTED BY MILLIONS! Delco is first choice with millions of car owners. American motorists depend on Delco for reliable starting power, for longer battery life.

ORIGINAL EQUIPMENT LEADER! Delco batteries are *original equipment* in more cars and trucks than any other make. These car and truck owners are presold on Delco . . . the battery they know for good service.

POWER-PACKED MERCHANDISING! Delco's up-to-the-minute merchandising aids, plus battery service and technical data, are all designed to keep you out in front in battery sales.

IT'S EASY TO GET STARTED! The big battery market is the *Delco* market. Delco sells easier because Delco has the confidence of more people. See your local Delco battery distributor. Find out for yourself how easy it is to get started in the Delco business.

Fuel Gages Continued from Page 92

move the gage from the panel and inspect for a bent pointer or pointer bearings. Check to see that there is a slight amount of end play in the pointer shaft and that the pointer turns freely. Clean the contacts by drawing a strip of clean bond paper between them.

To calibrate the dash unit, place the gage on the bench in the same

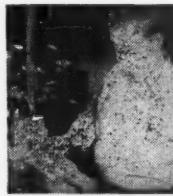
position as it was mounted in the panel. Shield the unit from air currents that would cause uneven cooling of the bimetal blades. Connect the "GNSW" terminal to the battery, connect the No. 1 and No. 2 terminals to the tank unit known to be in good condition and ground the tank unit case to the other battery terminal.

Set the float arm in the "empty"

position and allow time for the pointer to reach its indications. Adjust the pointer position by moving the arm carrying the stationary contact point. This arm is pivoted at its upper end and can be moved out or in with a slight pressure. Set the float arm in the "full" position and allow time for the pointer to come to rest. Adjust the pointer position by moving the arm carrying the insulating stop in the same manner as that just described for the left hand arm. Repeat the adjustments at the "empty" and "full" positions until no more change is necessary.

CAMSHAFT BEARINGS

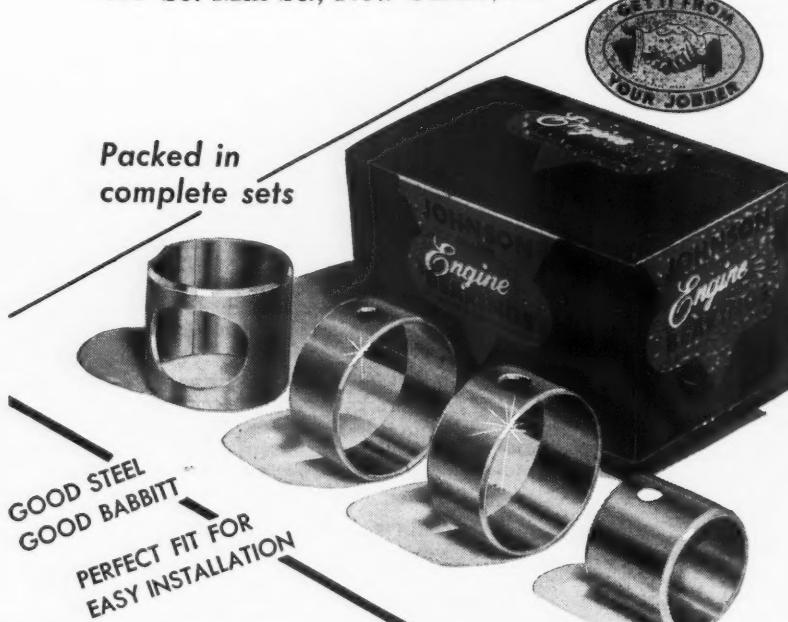
Just like the original equipment



MULTIPLE TESTING FOR ACCURACY

Johnson Automotive Bearings you sell are "twins" with those furnished the car manufacturer. They are produced to the same rigid specifications and are given the same tests and inspections. They are easy to install and fit perfectly. Sell Johnson Bearings with complete confidence.

JOHNSON BRONZE COMPANY
455 So. Mill St., New Castle, Pa.



JOHNSON B BEARINGS
Sleeve-Babbitt Type

Sleeve Bearing Headquarters Since 1901



"I've always wanted a fling at stock car racing!"

Import Sales

Sales in the United States, of British motor cars, increased 21 per cent during the first four months of 1952 in comparison with the same period a year ago. From January through April this year, the total was 6610 compared to 5292 for the same period in 1951. Exports from Britain are expected to increase throughout this year.

Gas Turbines

Gas turbine cars are now being built by four British firms. The Rover Company, recently demonstrated the power of its car by a speed trial in which the car went 151.96 mph. Now the Austin Company is building a gas-turbo car which will undergo full tests. Rolls-Royce and Armstrong Siddeley are also carrying out experiments in this field.

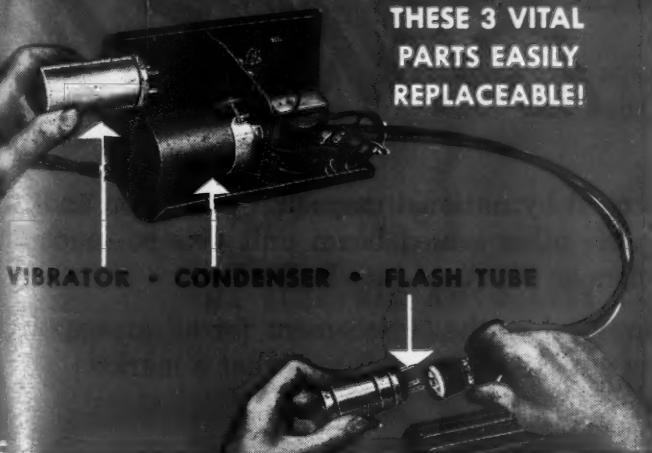
The Finest Timing Instrument Ever Produced



THE ONLY TIMER SPECIALLY DESIGNED FOR EASY "PLUG-IN" REPAIR!

NO MORE time-consuming returns to the factory for repairs! Brand new idea in Timer design lets you fix your own in short order. Readily available "plug-in" replacement units take care of most breakdowns.

THESE 3 VITAL
PARTS EASILY
REPLACEABLE!



VIBRATOR • CONDENSER • FLASH TUBE

Compact, built-in power amplifier operates direct from car battery . . . throws a brilliant beam of concentrated light. Handy "Flash Tube" is protected by sturdy rubber housing, yet small enough to reach in "tight corners."

THESE "POWERHOUSE" FEATURES MEAN EASIER, BETTER TIMING!

- Fully Protected Flash Tube
- Extra-Long 5-Foot Leads
- Attractive Baked Enamel Finish
- Precision-Ground Lens
- Sturdy Steel Carrying Case
- Compact — Lightweight — Versatile

TIMES • SYNCHRONIZES
ADJUSTS • CHECKS

IMMEDIATE DELIVERY
ORDER FROM YOUR
JOBBER TODAY!



E. Edelmann & Co.

2332 W. LOGAN BOULEVARD • CHICAGO 47, ILL.

WHICH WOULD YOU

This O

AUTO-LITE *Bull's-Eye*
CONTINUES TO BURN
EVEN WHEN LENS IS
CRACKED OR BROKEN

Nothing but a metal back sealed beam unit like the Auto-Lite Bull's Eye continues to burn even when lens is cracked or broken. All other types black-out at once . . . the Auto-Lite Bull's Eye continues to give light.

WHY IS THE AUTO-LITE

Bull's-Eye

METAL BACK SEALED BEAM LAMP

- Bull's Eye is backed by national magazine, television and radio advertising . . . no other sealed beam unit gets so much sales push to car owners as the Auto-Lite Bull's Eye.
- Bull's Eye is designed as the replacement for all makes of cars and trucks using a sealed beam unit . . . what a market!



SEALED TIGHT—STAYS BRIGHT..

DO YOU BUY FOR YOUR CAR?

OR This

LAMP WITHOUT BULL'S
EYE FEATURES BLACKS
OUT WHEN LENS IS
CRACKED OR BROKEN



SUCH A RED HOT MONEY-MAKER?

- ◎ Bull's Eye is sealed under 9000 lbs. per square inch pressure to exclude moisture and dust and maintain full candle power throughout lamp life.
- ◎ Bull's Eye is *guaranteed* to burn even when lens is cracked or broken.

THE ELECTRIC AUTO-LITE COMPANY

Toledo 1, Ohio

Merchandising Division

Toronto, Ontario

Tune in "Suspense" . . . CBS Radio Mondays . . . CBS Television Tuesdays

Get Bull's-Eye
Sealed Beam Units from
Your Auto-Lite Jobber
Today!



Only Auto-Lite Makes the Bull's Eye!



Jabro Sportscar . . .

Continued from Page 58

sheet metal, and from aluminum which he hammered into the shape he wanted for a large part of the body. The frame of the Studebaker was chopped and re-welded to suit his design and the power plant has been re-worked to incorporate his own ideas for power and efficiency. The basic steering wheel he made from steel on a lathe. Then he cut six pieces of hand carved gun stock walnut on top, six underneath and riveted them on to round off the circumference.



Fig. 4. The front wheel assembly showing independent suspension that Broadwell worked out to meet his needs. He used a torsion type, anti-sway bar (Buick) connected to rubber mounted links (Chevrolet). Bracket is welded to the "A" frame.

Now finished except for the bumpers and top, the Jabro is a low slung, streamlined sportscar with an estimated 125 hp, and capable of a speed of about 115 miles an hour. It has a curb weight of about 2350 pounds. Wheelbase is 106 inches. Overall height is 38 inches.

It is equipped with a conventional three speed forward and reverse transmission and also has an overdrive. The car has been designed to have the essential sports-car characteristics of good braking, fast steering, and ability to "corner."

Construction was worked out without the use of the model or drawings. Broadwell started with a wrecked Studebaker and cut and re-welded the chassis centers so

that it would be four inches lower and two inches shorter. Then he clamped four fenders and a deck lid (new replacement parts of old models cars) into various positions to establish the overall lines. Then he constructed a welded tubular frame to support the fenders and lid into position, and "the rest of the lines just fell in." The outside sheet metal of the doors, the front and other parts of the body skin were shaped by hand in a home-made curving device, from cold rolled sheet steel. The hood was shaped from aluminum. Starting from the original engine block, Broadwell made the engine he wanted. Cylinders were rebored from oversize, valve seat angles were changed, rod and pistons individually balanced and polished, a special camshaft, thin aluminum cylinder head and water-heating manifold were installed as well as two synchronized carburetors. Engine mountings, springs, drive shaft, steering arrangement, radiator and many other standard parts were radically altered to meet the requirements of this special design.

Broadwell, who is head of a wholesale electrical appliance firm, has long made a hobby of automobiles. He has learned about them

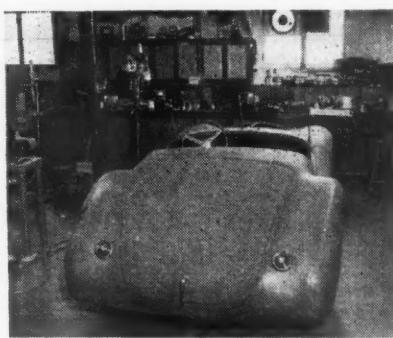


Fig. 5. The body is welded into a single piece and welded to the frame, which is bolted to the chassis.

from working with them and reading about them. He completed the entire construction in the basement except for the wiring and the final paint job. To get it out, he re-

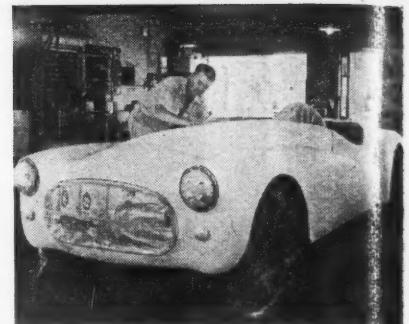


Fig. 6. Six coats of lacquer were sprayed on. The windshield, which was made from steel formed into box sections on a metal shaping device, was removed during painting.

moved the engine and wheels, turned the body side ways and slid it out in a protecting crate through a basement door which he had built extra wide with just such a contingency in mind.

How to Get Rid of Smoke Odors After a Fire Job

A number of letters have been sent in to Motor Age by readers seeking information on how to eliminate smoke odors after a fire job. This is one problem that can really be tough to lick, since the smoke seems to permeate the entire interior of the car, including the headlining, door upholstery, seat padding, and so forth. Unless every piece of fabric on the car is replaced, there is a good chance that the odor will stay around for weeks, and sometimes months.

In a recent issue of the du Pont Refinisher News there's a suggestion on this subject well worth passing on to all body shops. Spray a five to ten per cent solution of formaldehyde and water on all exposed trim, behind the instrument panel, down in the glass openings on the doors and in other places where the odor may be lingering. Using a spray gun to apply the solution is best because there is less danger of spotting the upholstery.

Then get some oil of wintergreen (both this and the formaldehyde are available from drug stores) and saturate some wood shavings in a container. Allow this to remain in the car overnight. Then air out the car and the smoke odor should be gone.

A Hein-Werner 4-ton "PUSH and PULL" Hydraulic Jack will INCREASE YOUR PROFITS

by enabling you to handle jobs you now "send out"

Model J4 4-ton has adequate power for:

- Minor frame work
- Front and rear frame horns
- Individual front suspension members
- Farm tractor and implement service
- Transmission hangers
- Light truck bodies
- Heavy truck boxes



Think of the extra profits you could make by doing a major share of the jobs you now send out or refuse . . . jobs that small capacity jacks cannot handle. It takes no big investment. A Hein-Werner Model J4 4-ton 'PUSH and PULL' Hydraulic Jack will provide adequate power for ALL types of body and fender repairs as well as minor frame work.

The Model J4 is light in weight and easy to handle. Provides direct "push" or "pull" action with one ram. You merely turn valve from right to left.

Pump operates at any angle and in any position without becoming airbound. Safety valves prevent overloading.

Other Hein-Werner "PUSH and PULL" Hydraulic Jacks are available in models of 10 and 20-tons capacity for heavy frame work with a complete choice of attachments. For details, including prices, see your H-W jobber or write us.

The Hein-Werner line of hydraulic jacks is COMPLETE! It includes Under-Axle Jacks for trucks and buses... "Bumper-Lift" Hydraulic Jacks for passenger cars... "Swift-Lift" and Service Jacks for shop use... "Push and Pull" Hydraulic Jacks for body, fender and frame work.



Hein-Werner Corporation, Waukesha, Wis.

Hein-Werner
HYDRAULIC JACKS

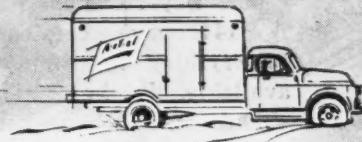
FOR *positive*
Performance



For specific information on
the use of MOPAR Chrysler
Engineered batteries inquire
about application chart from
any Plymouth, Dodge, De
Soto or Chrysler dealer.

CHRYSLER CORPORATION • PARTS

Longer Life



Use always-dependable

MOPAR

Chrysler-Engineered

BATTERIES

Approximately one out of every two vehicles in use today will require a new battery this winter. So get ready now for this multi-million dollar battery season by stocking and featuring MOPAR batteries.

MOPAR batteries are engineered especially for Plymouth, Dodge, De Soto and Chrysler cars and Dodge "Job-Rated" trucks by the same men who designed and built these vehicles. They're scientifically constructed to maintain *plus* power over maximum periods of time, at minimum cost. And their positive per-

formance is assured by constant production checks, careful laboratory and pre-shipment inspections and factory-fresh delivery.

There's a wide range of dependable, long-lasting MOPAR batteries for every car and truck need—from 80 amp.-hrs. to 135 amp.-hrs. capacity. Estimate your battery needs for the coming busy season now . . . and place your order early. You can get MOPAR batteries from any Plymouth, Dodge, De Soto or Chrysler dealer and from many general service and repair shops.



S DIVISION • DETROIT 31, MICHIGAN

New Products Continued from Page 54

427. Safety Catalog

The Boyer-Campbell Company: A 144 page catalog entitled "Everything for Safety" is now available. It describes face shields, welding helmets, safety clothing, machine guards, etc. Anything required for a comprehensive safety program is said to be described in this publication.

428. Test Stand

King Electric Company: Two new models of the standard King generator and regulator rest stand have been announced. They are modifications of the GT-15, containing many improvements. The outstanding innovation of this model is the complete elimination of conventional testing

POWER- PUNCH

for modern engines

HOT SPARK

NIE-TRON super heavy duty coil

The guts, the performance, the *reserve power* you need to meet top demands of today's improved engines. Much greater secondary output than standard coils, with hot spark at high speeds. No extra draw or overload on primary system, precluding point failure and need of high-capacity condenser. Will fire an engine on as low as 2 volts.

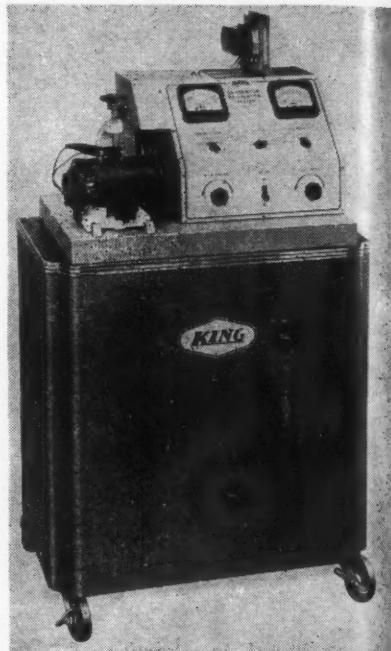
NO NEED FOR HIGH
CAPACITY CONDENSER
RECOMMENDED FOR ALL
6-VOLT SYSTEMS
MAXIMUM INSULATION
UNIVERSAL BRACKETS
FURNISHED FOR ALL
POPULAR MAKES AND MODELS
CARS, TRUCKS, BUSES,
TRACTORS

C.E. NIEHOFF & CO.
4925 W. LAWRENCE AVE. • CHICAGO 30, ILL.



Built for the
BRUTE JOBS of today!

Send for Detailed Information



leads. Test stand connectors to the generator and regulator are exactly the same as in any ordinary vehicle installation. Clearly identified electrical switches provide any desired series of tests in the units. The testers are available in bench models and cabinet models, and standard units are for six volt generators only, driving at rated output up to 60 amperes.

429. Radiator Tank

Inland Mfg. Company: A new radiator cleaning tank designed especially to enable the small to average size operator to clean radiators for repairing by modern method of hot chemicals has been announced. The model J-1 radiator cleaning tank offers such mechanical features as a 12 gage steel tank, encased in 1 inch of

(Continued on page 104)



"Then what will a car cost me—stripped!"

ROAD TESTS prove Round tire chains outwear other leading makes by

25.9%



Actual road testing of tire chains is the only sure way to determine their wearing qualities. That's why independent engineers road test Round Tire Chains continuously . . . to determine how they wear and to reveal how they can be improved.

These engineers also test other brands of chains. In recent tests, described above, they reported that Round Chains outwear other leading makes by 25.9%! They PROVED by actual road tests that *Round Chains have superior wearing qualities.*

The 25.9% superiority of Round Tire Chains means you can offer your customers a chain that gives an *extra mile* of service for every four they drive — at no extra cost. It's the kind of product you can sell quickly and easily, with the confidence that you're selling the **BEST!**

So why not sell Round — the tire chain PROVED 25.9% longer wearing by *actual road tests!* Ask your jobber for Round *Road Tested Tire Chains* TODAY.



NEW PACKAGE!

Colorful, sturdy, clearly labeled box adds point-of-sale selling power . . . makes handling and stocking fast, easy.

ORDER *Round* ROAD TESTED CHAINS FROM YOUR JOBBER!

Wherever You Are... You're Near a *Round* Chain Factory

THE CLEVELAND CHAIN & MFG. CO.

Cleveland 5

THE BRIDGEPORT CHAIN & MFG. CO.

Bridgeport 1

ROUND CALIFORNIA CHAIN CO.

So. San Francisco

THE ROUND CHAIN & MFG. CO.

Chicago 38



ROUND LOS ANGELES CHAIN CORP.

Los Angeles 54

ROUND SEATTLE CHAIN CORP.

Seattle 8; Portland 10

THE SOUTHERN CHAIN & MFG. CO.

Birmingham 4

ROUND WOODHOUSE CHAIN & MFG. CO.

Trenton 7



New Products . . .

Continued from Page 102

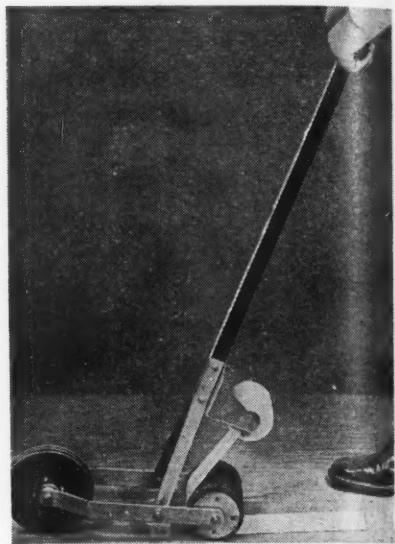
insulation and steel outer tank; a large useable inside space; and an immersion type burner which gives even, efficient, economical heat. Four to six average size radiators can be cleaned in this tank at one time.

430. Lane Marker

Minnesota Mining & Mfg. Co.:

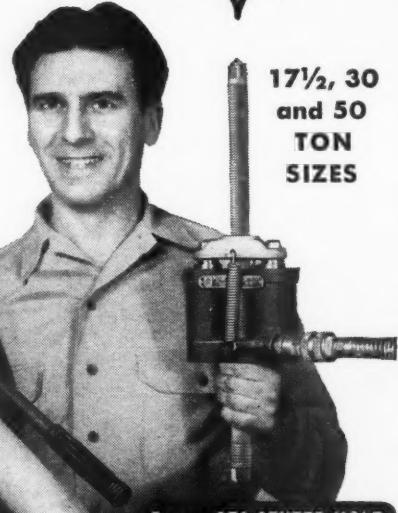
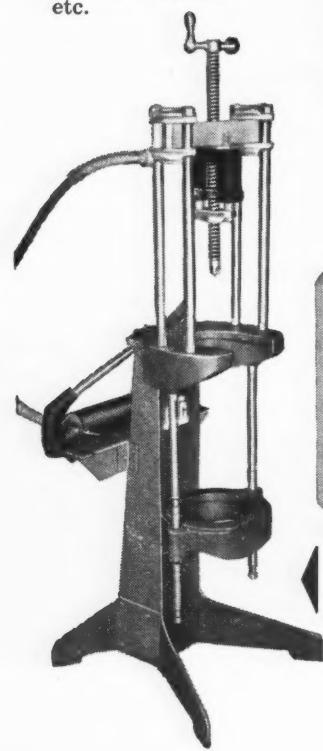
A light weight applicator for applying lane marking tape to garage floors has been announced. Trade named "Scotch" brand lane marking applicator, the unit is designed to semi-automatically apply strips of "Scotch" brand plastic film tape to make traffic lane and parking stalls on floors. With the new applicator, only one man

is needed and the tape is applied and rolled in a single step. The operator pushes it along the floor with the aid of a waist-high handle. The tape is fed off a roll holding attachment under the pressure wheel and applied to the



Tough Jobs! They're a cinch with the CENTER-HOLE HYDRAULIC PULLER

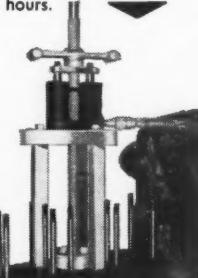
The OTC Power-Twin Hydraulic Puller is an ideal, economical garage tool, compact, powerful—handles 95% of the press work in the average shop. The Power-Twin may be detached from press—used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety. A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves bearings, races, gears, pinions, couplings, etc.



17½, 30
and 50
TON
SIZES

Famous OTC CENTER HOLE Ram permits fast, easy adjustment to the work and interchange from push-puller to sleeve puller to bench press.

Pull or install cylinder sleeves with the OTC Power-Twin Hydraulic Puller in minutes instead of hours.



COMPACT, POWERFUL

	17½	30	50
Height	5½"	6¾"	9½"
Width	5½"	7"	8½"
Thickness	2"	3"	3½"
Ram Travel	2"	2½"	3"
Center Hole	1" - 8	1¼" - 7	1½" - 6
Weight	10 lbs.	23 lbs.	40 lbs.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Move it where you want it . . . it's portable.

See your OTC jobber or write to us . . . today!

OWATONNA TOOL COMPANY

321 CEDAR STREET
OWATONNA, MINNESOTA

floor in a continuous strip. The pressure wheel is said to apply the tape smoothly to all types of floor surfaces including crevices and depressions often found in older wood and concrete floors.

431. Hex Socket Screws

R. J. Loock & Company, Inc.: A new line of hexagon socket screws and hexagon keys, known as "Lightin'" line has been announced. The manufacturer states that it contains ten each of eight of the most popular set screws and four sizes of keys to fit. The assortment is supplied in a convenient box and refills are packed 25 in a box.

432. Screwdriver

The E. L. Dye Company: "Click-It" is the name of a new screwdriver that has a reversible blade which can be adjusted to various lengths. The chuck is pulled back and blade can be "clicked" to the desired length. Both Phillips and slot head blades are on the same shank, which is reversed in the handle. The blade is made of high alloy chrome steel and the handle is made of non-conductive Tenite.

433. Convertible Cover

States Development & Mfg. Company: The convertible cover (Continued on page 108)

plied
The
floor
han-
roll
the
o the

Allied
A.P.C. *

American
Brakebloc

BRAKE LINING AND FRICTION FACINGS

BALKAMP

PARTS FOR FORD,
UNIVERSAL, PLYMOUTH
AND ALL POPULAR CARS

Belden

WIRE AND LEADS

BRIDGEPORT

TIRE VALVES & ACCESSORIES

BRIGGS

SPARK PLUGS

BROWN LIP

LEATHER SEATS

CELORON

SPARK PLUGS

DETROIT

SPARK PLUGS

DITTMER

SPARK PLUGS

DUCKWORTH

TIMING CHAINS

ECHLIN

SPARK PLUGS

Federal

BALL BEARINGS

Allied

GRAPHO

MARTIN-SEOUR

AUTOMOTIVE PAINTS

MicroTest

SPARK PLUG TESTERS

Modac

FAN BELTS AND

RADIATOR HOSE

Monmouth

ENGINE BEARINGS

CLUTCH PLATES & PARTS

CHASSIS PARTS

New Britain

SPARK PLUGS

Allied

PRECISION

SPARK PLUGS

PURITAN

BRAKE FLUID

FLUID-CHLORINE

UNIVERSAL SPARK PLUGS

HYDRO-ELECTRIC FLUID

RARITAN

POLAR BEARINGS

Allied

RAYMOND

VALVE SPRINGS

Soundmaster

MUFFLERS

STANDARD

GREASE RETAINERS

Spicer

UNIVERSAL JOINTS

Thomson

TERMOSTATS

TRICO

VACUUM OPERATED

SAFETY PRODUCTS

UNITED

FUEL PUMP

HYDRAULIC BRAKE

SPEDOMETER AND

BRAKE CABLES

Allied

WISCONSIN

PISTONS-NALEES

ZOLLNER

TEST EQUIPMENT

Use this N·A·P·A Poster



- ✓ Electrical System ✓ Brakes
- ✓ Motor and Clutch ✓ Safety Devices
- ✓ Cooling and Exhaust Systems
- ✓ Chassis and Shocks ✓ Accessories

AS ADVERTISED IN
POST AND Collier's
Quality assured by the nation's largest independent parts organization

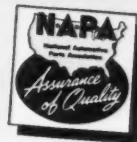
—to get your full share of the Fall Service Business

When your customers pull in for pre-winter service, sell a car-protecting, profit-making *mechanical checkup* along with the winter lubricants and anti-freeze! Ask your NAPA Jobber for one of the fall service posters shown above. Display it prominently on your wall or window. *Use it* to remind every customer that your shop is headquarters for the

complete changeover and checkup service nationally advertised by NAPA in Collier's and The Post. There's no charge for the poster. All your NAPA Jobber asks is that you remember: For fast service on finest quality parts and supplies, for cars and trucks of all makes and ages, "Your NAPA Jobber is a Good Man to Know!"

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

Your NAPA Jobber
is a Good Man to Know!





WORLD BESTOS

FIRST for steady.



PRESCRIBED FRICTION SETS



GRID LOCK SETS

Take Advantage of These Exclusive ACE-HIGH DEALS for Car Dealers and Independent Repair Shops

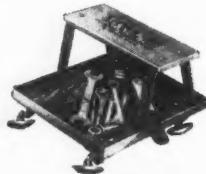
Get started with World Bestos NOW . . . and get absolutely free one or more of these fine premiums. Only World Bestos offers Ace-High Deals!



Easy-Roll COMFORT CREEPER . . .
given with each order for any 25 sets of World Bestos Lining. Regular \$8.75 Gi-Gr-Nite value. Postpaid anywhere in U. S.

"GI-GR-NITE" LITTLE JOE . . .

given with each order for any 20 sets of World Bestos Brake Lining. A must for brake work. Regular \$7.65 value (tools not included). Postpaid anywhere in U. S.



Personalized ZIPPO LIGHTER . . .

given with each order of any 12 sets of World Bestos Brake Lining. Engraved with your exact signature in color. Regular \$4.60 value. Postpaid anywhere in U. S.



Ask your World Bestos Jobber about these deals . . . or write direct to World Bestos

Your World Bestos Your Brake Lining and

Prescribed Friction Sets . . . for passenger cars, commercials, taxis and trucks. Full molded, highest quality lining engineered for each make and model vehicle.

Grid Lock Sets . . . top quality Wireback molded sets for all popular cars, commercials and light and medium trucks. A must for complete brake service.

Bonding . . . both Prescribed, Friction and Grid Lock are available as undrilled, unchamfered, packaged sets to be used with World Bestos Pyrobond Film. Unexcelled bonding results for passenger cars and trucks. Bonded shoe exchange service available from World Bestos' Warehouses and Jobbers.



Get it from Your World

WORLD

BRAKE LININGS and BRAKE BLOCKS consistent quality

 Every World Bestos Brake Lining is specifically designed to meet U. S. Government Bureau of Standards Specifications HHL-361-A.

Its consistently high quality is due to the strict production and quality control that is maintained in the World Bestos plant . . . the most modern, most efficient plant in the brake lining industry.

That's why you're always sure of getting exactly the right fit, the same long wearing qualities, the same braking efficiency and customer satisfaction every time you install World Bestos.

Jobber Can Supply All Block Needs . . .

Truck Blocks . . . $\frac{1}{2}$ " thickness and over, in a selection of compounds for medium, medium high and medium low friction . . . and in combinations to meet heavy-duty conditions quietly with a minimum of fade and drum wear.

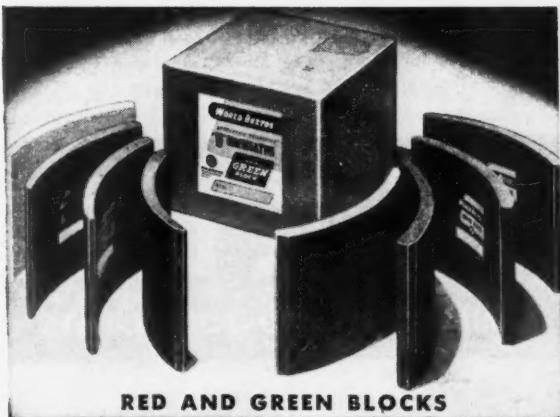
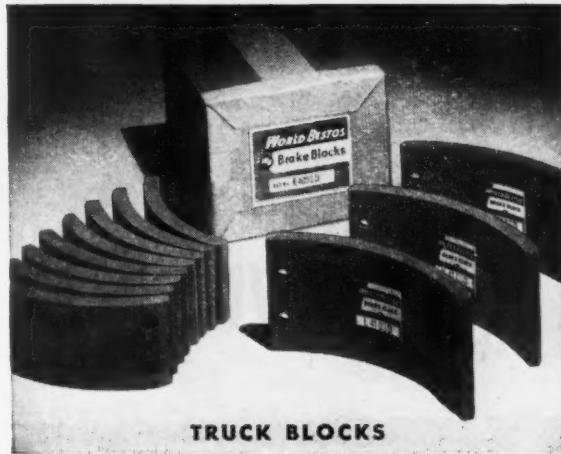
Truck Group Blocks . . . Undrilled, heavy-duty segments in a variety of sizes that will service thousands of different truck and bus models back to 1933. High or medium friction. Dependable performance guaranteed.

Red and Green Blocks . . . High friction, guaranteed No-Fade "J" Combination Block Sets for heavy-duty trucks and trailers in extremely severe service; guaranteed Noise-Proof, No-Fade "U" Combination Block Sets for Buses. Both combinations effectively eliminate glazing and reduce drum heat-checking.

Bestos Jobber . . .

BESTOS

NEW CASTLE
INDIANA



New Products . . .

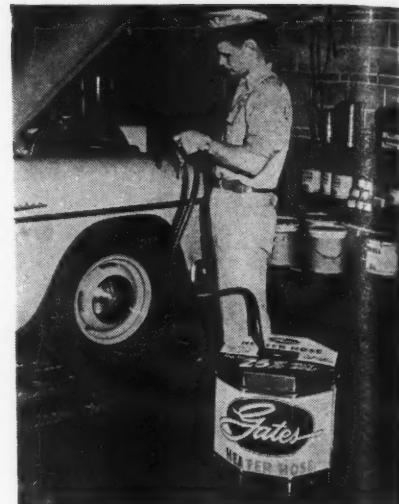
Continued from Page 104

all is a vinyl plastic cover with an elastic bottom, designed to cover a convertible when the top is down. It covers from the windshield to the back booth and down to the doors, so that if the owner wants to let the top down while the car is unattended, there is no danger of rain getting into the inside of the car. It can also be

used to protect the canvas top when it is up. One model is said to fit all makes.

434. Hose Dispenser

Gates Rubber Company: Automobile heater hose is now being shipped by this firm in a new type double duty corrugated container. The unit functions as a dispenser



"VIXEN" FILES ARE MADE ONLY BY HELLER

An expert in no time
...with a "VIXEN"!



For a "VIXEN" is easy to use!

Almost anyone can become an expert refinisher quickly.

The uniform, deep, curved teeth—milled to a sharp cutting edge—shear welds and high spots to a sleek, bright finish. You'll never be troubled with tracking, scratching or grooving. Because of its self-cleaning gullets, a "VIXEN" won't load up or clog.

Ask your jobber about the popular babbitt file as well as other "VIXENS."

HELLER BROTHERS COMPANY



A New Jersey Corporation
America's Oldest File Manufacturer
NEWCOMERSTOWN, OHIO

Easy to Identify "VIXEN" By the White Envelope

For your own protection against imitations, look for "VIXENS" in factory-sealed white envelopes, packaged in a white carton.



Handy holder easily curves "VIXEN" to fit surface. Only a "VIXEN" can be resharpened again and again.



tainer. The unit functions as a as well as a basic shipping container which protects the hose. The hose can be uncurled and pulled out through an opening in the center of the hood. A measuring rule is printed on the side and holes in the carton are provided to show how much unused hose is left to help the shop in reordering in advance.

The dual purpose container is made by Gaylord Container Corporation.

435. Touch-Up Gun

Black Mfg. Company: A light-weight paint touch-up gun has been added to the Black Arrow Paint Spray Equipment line. The gun is designed to spray light fluid such as thin lacquers, paints, and chrome protective coating.



The gun will operate with as little as four pounds pressure. The gun body is made of aluminum and all other parts made of brass. There is only one moving part, the manufacturer reports. The gun is equipped with an air regulator which is said to regulate the flow of material.

We're handing you the *right* "kind of a line!"



It means more sales, more profits for you and the finest kind of piston ring service for your customers. Check its features. You'll see why.



excessive ring wear or some other ring, piston or cylinder trouble, American Hammered Piston Rings do the job best. Try them and see.

KOETHERIZING

MORE PISTONS HAVE BEEN RESIZED BY KOETHERIZING THAN BY ANY OTHER METHOD

This famous, 17 year old process of piston resizing tops the field in accuracy and permanency. Look at the method and you'll know why.



Stresses have collapsed piston by pushing skirt inward, causing piston stop and ring wear.



Resizing is finished in seconds. And, because Koetherizing takes place when metal is cold, the piston will never collapse again. In fact, it will actually expand to compensate for wear.



Inside of piston skirt being peened with shot at the rate of 16,000 a second, causing rapid, accurate expansion to within a half a thousandth of an inch.



GI-60 GROOVE INSERT

The GI-60 Groove Insert forms a heat-treated, spring steel shield which resists wear and pounding of the top land better than either aluminum or cast iron. This insert is locked permanently in place and affords perfect seating for the new ring. It's thousands of miles of extra life for a piston. Here's how it works.



DRY FILM LUBRICANT (ANTI-SCUFF COATING)

Dry Film Lubricant furnishes outstanding protection against serious friction damage and allows a good, snug fit, without danger of scuffing during the critical break-in period. Dry Film Lubricant offers positive, visual proof of Koetherizing.



American Hammered Piston Rings and Power-Plus Service, the most complete piston ring service package in the field

American Hammered AUTOMOTIVE REPLACEMENT DIVISION

300 SANFORD STREET, MUSKEGON, MICHIGAN
Manufacturers of American Hammered
Automotive Replacement Piston Rings



G.M.'s Air Conditioning

Tests on General Motors' automotive air conditioning unit have shown that the heat inside a car that has been standing in the sun at high temperature can be reduced to a comfortable driving temperature within a distance of six city blocks and that within a mile and a half driving distance temperatures are very appreciably

reduced. The new system, which is expected to be available on Cadillac and Oldsmobile in 1953, provides adequate cooling even at low speeds.

The principal mechanism of the air conditioning unit will be located upon the shelf in the rear of the trunk compartment. A single control will be placed on



The compressor which pumps Freon, a non-toxic refrigerant, is shown here. This pump runs directly off engine; blowers which distribute cooled air are electric.

the dash of the car and temperature can be maintained at a desired level by setting a thermostat.

The air conditioning device will be particularly desirable not only in hot weather but also in dusty areas or under windy conditions because the car can be driven in any temperature with the windows closed. While the car will thus be automatically cooled, wind noise and drafts in the car are substantially reduced.

The basic principle of the new system is the same as the cooling systems in offices and on railroad trains. A rotary compressor is mounted on the engine. A completely sealed refrigeration unit, using non-toxic Freon, is mounted on the shelf in the trunk.

Kaiser Group to Aid K-F Refinancing

There is considerable activity at Kaiser-Fraser in the field of additional financing, including a rumor of a merger with another independent automobile company. The latter possibility, however, is being discounted in the industry. Most recent financial activity involves a possible offering of a \$25 million to \$30 million security issue underwritten by Henry J. Kaiser Co., a holding company owned by Henry J. Kaiser, his family, and associates. The exact amount of the proposed issue and the type of securities have not yet been defined, but the revenue derived would be used to strengthen K-F's position.

IF... YOU'RE A MECHANIC OR SERVICE MAN

DON'T BE WITHOUT

LIQUID WRENCH



It's one of the handiest tools you can have in your tool box. It makes tough jobs easy.

LIQUID WRENCH is a powerful blend of fast-acting and super-penetrating solvents that frees "frozen" or rusted parts in a jiffy. Quickly dissolves or loosens rust, corrosion, scale, varnish, gum, or paint.

For a thousand uses . . . it will save time and temper.

LIQUID WRENCH is one of the family of world famous SOLDER SEAL products for the automotive trade.



RADIATOR SPECIALTY COMPANY

CHARLOTTE, NORTH CAROLINA

RADIATOR SPECIALTY COMPANY OF CANADA, LTD.





MONEY CAN'T BUY ASSET OF COMMERCIAL CREDIT

FINANCING, SAYS DEALER—Mr. Buddy Ne Smith, owner of Ne Smith Motors, Cochran, Ga., says, "My long-time connection with COMMERCIAL CREDIT convinces me that a business relationship with a really good finance company is an asset no amount of money can buy. The dealer's security and profit rest upon your ability to get back the money tied up in car financing—that's why I particularly appreciate your fine collection service. Rest assured that I will utilize COMMERCIAL CREDIT service that has been so satisfactory in the past."



COMMERCIAL CREDIT PLAN USED FOR 30 YEARS—

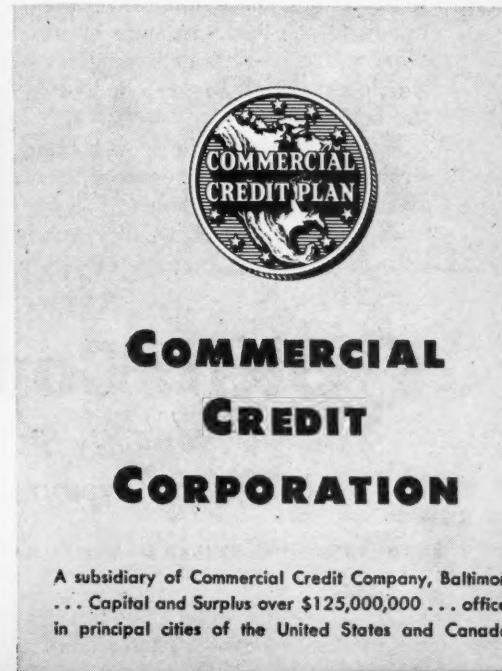
Myers Motor Company, Inc., Norristown, Pa., has used the COMMERCIAL CREDIT PLAN for so long that Mr. Roy W. Marberger, President, does not recall how financing was handled previously. Mr. Marberger feels that COMMERCIAL CREDIT's extensive national advertising helps build his business by familiarizing customers with the Plan and all its advantages. He says, "The fact that we have used it for over thirty years is proof enough that we are more than satisfied with the COMMERCIAL CREDIT PLAN."

YEAR AFTER YEAR—Commercial Credit financing is complete, competent, dependable



COMMERCIAL CREDIT DOES ITS LEVEL BEST TO HELP DEALERS—The many advantages of the COMMERCIAL CREDIT PLAN are praised by many dealers as being the key to more profitable operation. COMMERCIAL CREDIT offers you a complete financing package—from factory drive-away, wholesale and demonstrator plans down to the last detail of retail financing, collection and prospect follow-up. Customers benefit, too, through Automatic Car Insurance, Life Insurance, Hospitalization, Bail Bond and Nationwide Service.

ASK TO SEE THIS STUDY—This interesting study analyzes the time-sales market, shows how the COMMERCIAL CREDIT PLAN may help you keep profits when new car deliveries are down. Write, wire or phone your nearest COMMERCIAL CREDIT office, and one of our local representatives will be glad to show it to you at no obligation.



**COMMERCIAL
CREDIT
CORPORATION**

A subsidiary of Commercial Credit Company, Baltimore
... Capital and Surplus over \$125,000,000... office
in principal cities of the United States and Canada



Machine Against Muscle

THE STORY OF WHY A FAMOUS COMPANY
SEES FIT TO TAKE A NEW NAME

In 1924 the dream of a man named Joseph W. Sullivan was realized in a revolutionary new tool that was to take the industrial world by storm. The portable power saw was born and a young company was off to a flying start.

Inevitably, the success of this new power tool attracted imitators, brought others to the field. In spite of this, Skilsaw, Inc., maintained a leadership which continues to keep it *first* in the field.

With this remarkable growth came stronger and stronger demand from *all* industry for *other* kinds of power tools built with SKIL Quality, *other*

ways to replace muscle with machine and do jobs better, with less work in less time. Skilsaw, Inc., has answered this demand—now offers more than 160 different models of portable power tools, each one an example of the finest engineering and quality in the field—SKIL Quality!

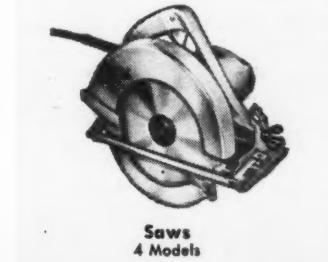
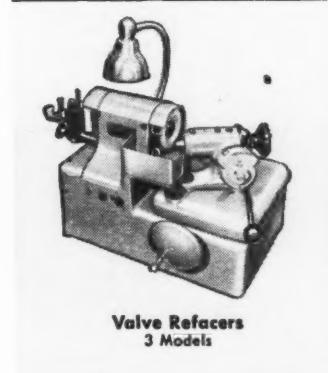
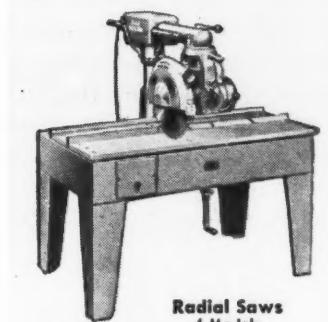
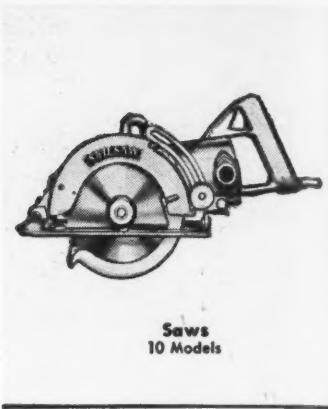
So it is with justifiable pride that we now alter a corporate name we have in simple fact outgrown. Hereafter, the company long known as Skilsaw, Inc., will be known as SKIL Corporation, the name to be remembered in the manufacture, sale and service of portable power tools.

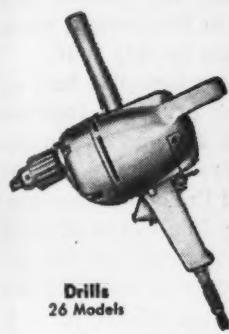
SKIL Corporation

formerly SKILSAW, Inc.

5033 ELSTON AVENUE, CHICAGO 30, ILLINOIS

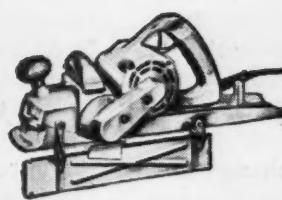
BOTH SKIL AND SKILSAW WILL CONTINUE TO BE USED AS TRADEMARKS



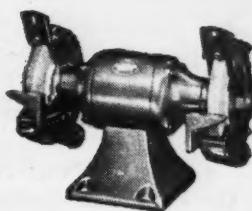


SKIL
PORTABLE TOOLS

Drills
26 Models



Plane
1 Model



Bench Grinders
7 Models

BESIDES SAWS . . . 26 OTHER TOOLS AND



Oscillating Sander
1 Model

Floor Sanders
2 Models

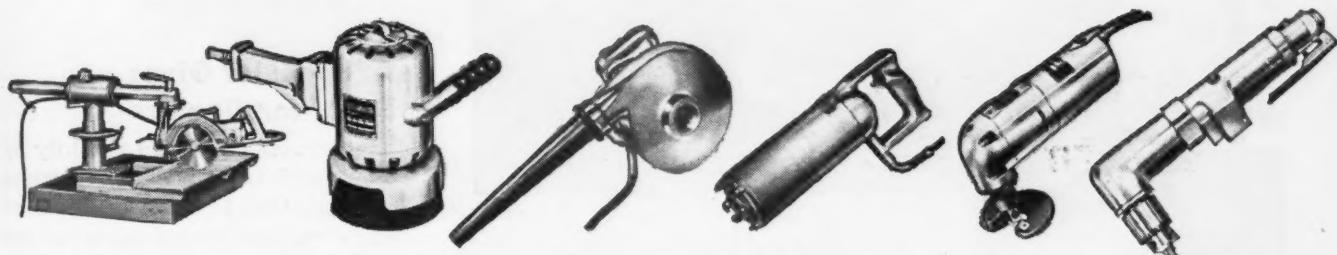
Disc Sanders
6 Models

Portable Grinders
5 Models

Hand Grinders
3 Models

Drivers and Runners
20 Models

MORE THAN 150 DIFFERENT MODELS



Radial Supports
3 Models

Polyphase Grinder
1 Model

Blowers
5 Models

Electric Hammer
1 Model

Shears
1 Model

Pneumatic Right Angle
Drills & Drivers
6 Models

FOR EVERY INDUSTRY



Valve Seat Grinders
2 Models

Automobile Polishers
2 Models

Valve Seat
Grinder Sets
4 Models

Pneumatic Hammers
12 Models

Pneumatic Drills
7 Models

Pneumatic
Sanders and Polishers
2 Models

INCLUDING THESE SKIL HOME SHOP TOOLS



Belt Sander
1 Model

1/4" Drills
2 Models

1/2" Drills
2 Models

Kits
3 Models

Sander Polisher
1 Model

Oscillating Sander
1 Model

Hedge Trimmer
1 Model

Plymouth Plane Contest Winners Announced

Eleven-year-old Chris A. Hanson displayed all-around flying ability to gallop off with top honors in Plymouth Motor Corp.'s Sixth International Model Plane contest.

Chris, who was co-champion in the Freshman division a year ago, was named high point champion of the meet, and at the same time claimed undisputed title to the

championship for Freshmen. He unseated former champion Fred W. Sage, III, an eight-year-old from Independence, Mo., who shared top Freshman honors with Chris last year and who ruled undisputed as the contest's top point winner two years ago.

In a close battle for points throughout the four days of flying, Chris edged Freddie out by a single point, 36 to 35. It was balance in all events, rather than spectacular performance in any

one, which won the honors for young Hanson. He placed and earned points in five events, while Sage took points in only four.

A huge victory banquet held on Bob-Lo Island brought together leaders in the automobile industry, high officers of the Navy and Air Force, and the 500 young contestants, their families and their mechanics. A total of 103 beautiful trophies, some of them as tall as the winners, and \$4,725 in U. S. Savings bonds were presented to the boys and girls who sat in the winners' circle and were the special banquet guests.

Philadelphia PAR Group Meets to Plan Action

PAR (Project-Adequate Roads), an off-shoot of the Highways Users Conference, held a meeting recently in Philadelphia with the objective of initiating an action program in that area. R. S. Wilson, vice president of the Goodyear Tire & Rubber Company, delivered the principal address.

API Booklet Gives Facts for Dealers

A booklet published recently by the American Petroleum Institute entitled "Stop Gasoline Losses" has some interesting facts for the operator of any gas pumps. Printed in two colors, it has sixteen pages packed with interesting facts like the following: "Two leaking drops per second add up in a year to 1350 gallons—a lot of profit dollars to leak away."

AJAX

HYDRAULIC SERVICE JACKS

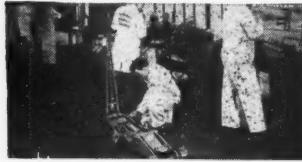
...FOR EVERY JOB IN THE SHOP
...FOR YEARS OF
TROUBLE-FREE SERVICE



TROUBLE-PROOF POWER UNIT
Heart of Ajax No. 2784 is this precision engineered, ruggedly-built hydraulic power unit. Every vital part is heat-treated.



DIRECT LINE DRIVE
This exclusive feature of the No. 2784 assures trouble-free performance by eliminating side strains on the power unit which cause leakage of jack fluid.



**SPEEDY, FACTORY-QUALITY
REPAIR SERVICE**

8 Direct Factory Branches and 9 Authorized Service Stations staffed with factory-trained specialists provide fast, preventive maintenance and repair service with new jack guarantee.

AJAX . . . THE "COVERAGE LINE" OF QUALITY JACKS

● Here's your one source, your dependable source, for every jack need. Ajax gives you the right model, with advanced features, for every lifting job.

Take the fast, rugged hydraulic service jack, No. 2784—designed and built for long-lasting, dependable operation. Its 4-ton capacity handles passenger cars and all but the heaviest trucks and tractors. Here is every feature needed for speedy, efficient work... ease of operation... ample chassis length for dollying... positive-locking, 3-position handle adjustment... gravity centered balance for quick positioning.

For quick driveway, shop and curb service, No. 2767—a 1½ ton hydraulically operated jack—provides outstanding value at surprisingly low cost.

In times like these, it's doubly important that you have good, sturdy, dependable lifting equipment—quality jacks that will outlive the "emergency." With Ajax, you get long, trouble-free service with minimum maintenance expense.

AJAX AUTO PARTS COMPANY • RACINE, WISCONSIN



..for cars...for trucks...for buses...for tractors



FEL-PRO FULL LINE OF GASKETS

and  INSTALLATION KNOW-HOW

You can't beat a Fel-Pro Gasket for use on today's high compression engines. And when you install Fel-Pro Gaskets using the Installation Know-How "Tips" in the FREE Fel-Pro GASKETING MANUAL, it adds up to a "Job-Tested Team" that makes a praise-winning job every time.

For many years Fel-Pro Engineers have kept pace with the latest developments in gaskets for modern automotive engines by working closely with production engineers in the leading car factories. To overcome the ever increasing demands of greater heat and pressure in high compression gasoline and diesel engines,

Fel-Pro has produced gaskets unequalled for rugged strength, durability and sealing qualities.

No doubt about it—you've got a real "Job-Tested Team" when you install Fel-Pro Gaskets and use the Installation Know-How contained in the FREE Fel-Pro Gasketing Manual.

Praise-Winner with this "Job-Tested Team"



Little Drip says:
"High Compression or not... no gasket is better than the installation... no installation is better than the gasket... Do the job right—Use Fel-Pro !!"



FREE—GASKETING MANUAL
Helpful gasketing "tips" gained from Fel-Pro's many years' experience with leading automotive factories and mechanics everywhere. See your Fel-Pro Jobber for your **FREE** copy or write TODAY to:

FELT PRODUCTS MFG. CO., 1521 Carroll Ave., Chicago 7, Ill.
FAST SERVICE ASSURED By Warehouses Near You. ATLANTA, DALLAS, BOSTON,
NEW YORK, LOS ANGELES, OAKLAND, PORTLAND



CASH IN on Fall Changeover Time with
Fel-Pro WATER OUTLET GASKET DISPLAY ASSORTMENTS

Order NOW from your Jobber:
Assortment WO-9— for all popular cars.
Assortment WO-18— service for all cars.

**YOU'RE THE RINGMASTER when you
give your customers "new engine"
performance with the new Pedrick**

FORMFLEX



CASH IN ON YOUR PEDRICK JOBBER'S



"BLUE PLATE SPECIAL"

Do more engine overhaul business without
adding a cent to your shop overhead! Use the
selling tools your jobber provides to *get* more jobs.

Make a profit on his precision machine shop
service and free your mechanics to get jobs

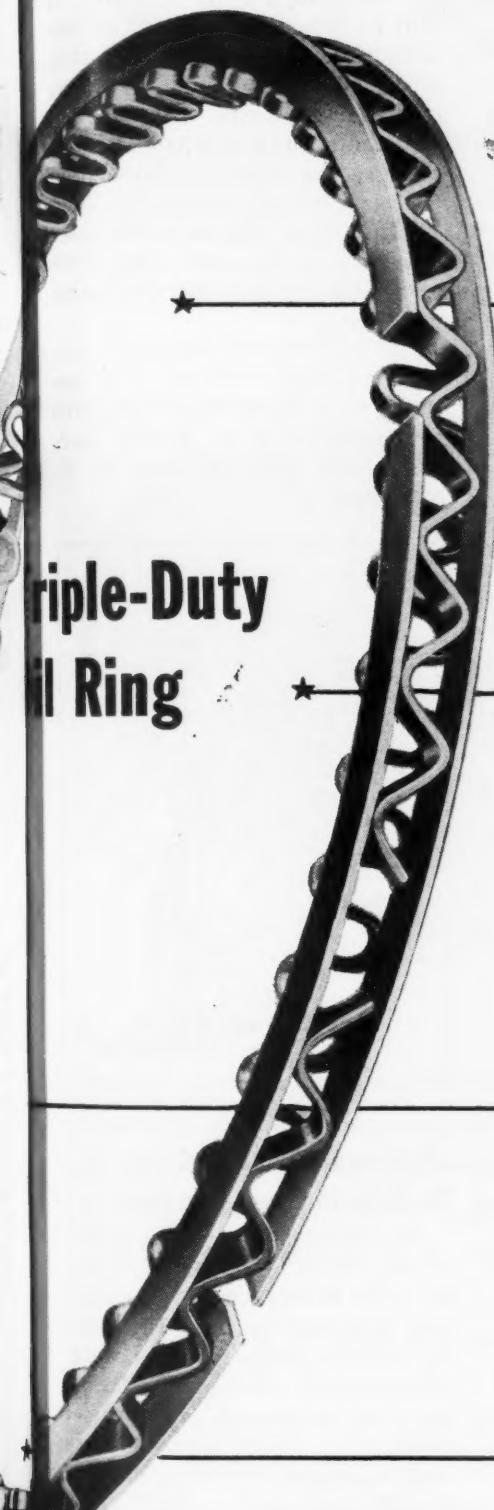
out faster. To be sure of
top "new-engine" performance
and complete car-owner satisfaction,
specify Pedrick Formflex Engineered
Sets in every "Blue Plate Special!"



*There's a
"NEW ENGINE"
in every box*

Pedrick FORMFLEX ENGINEERED SETS

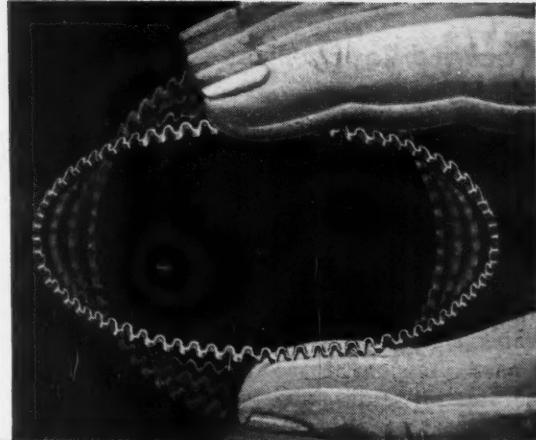
WILKENING MANUFACTURING CO., Philadelphia 42, Pa.
In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto



Triple-Duty Oil Ring

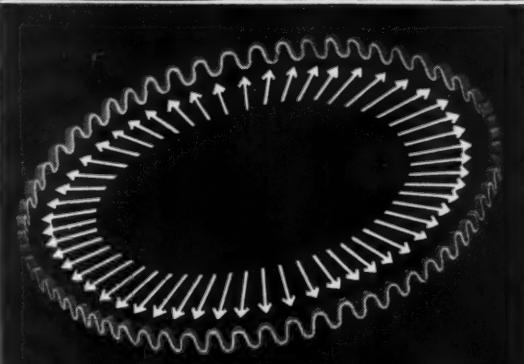
AMAZINGLY CONFORMABLE

Made possible by a revolutionary new type of expander—The Pedrick Equalizer. Gives even contact with cylinder all around.



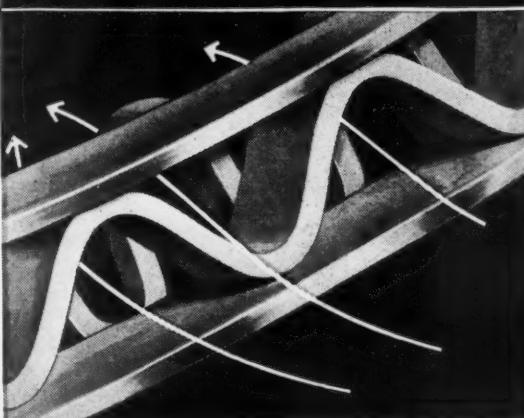
UNIFORM PRESSURE DISTRIBUTION

The "Equalizer" gives equal outward pressure all around, with more perfect seal—better oil control—far longer life.



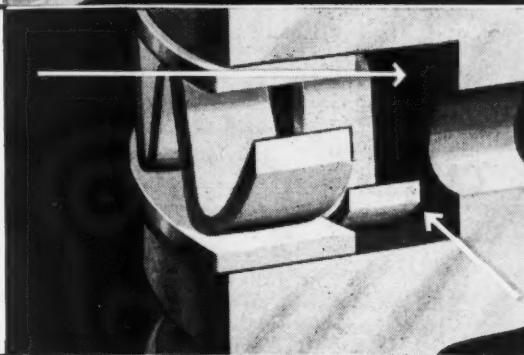
ALMOST TRIPLE OIL DRAINAGE

Because of 2½ times more open area provided by the Equalizer and spacer. Eliminates any chance of plugging.



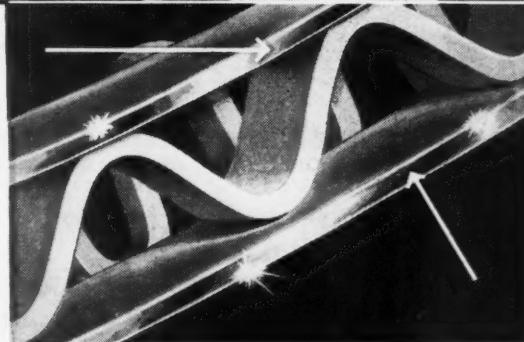
INDEPENDENT OF GROOVE DEPTH

The Equalizer does not rely on contact with bottom of piston groove for its pressure or tension.



CHROME FOR LONG LIFE

The faces of the two steel rails are chrome plated for 2 to 4 times longer life.



PATENT APPLIED FOR



Packard Reorganizes Under New Head

The outline of Packard's reorganization under its new president, James J. Nance, is beginning to take shape. A new marketing department has been set up, consisting of an Eastern and Western division under assistant general sales managers, a special Pacific Coast division, three marketing service divisions at the Detroit headquarters and two special divi-

sions for export sales. Frank Frost, formerly with Oldsmobile, has been named assistant general sales manager in charge of the Western zone.

C. E. Briggs, who formerly held the title of general sales manager, has been named marketing manager, a new position to include product and market planning, car distribution, parts and accessory merchandising, sales analysis and organization, and field business management.

A headquarters division dealing with service has been set up to be headed by J. A. Carr, who has been service manager for Packard. It will be responsible for all service activities, including promotion, technical training and literature, customer relations, warranty adjustments, and company service garages. An owners' relations department will be headed by Hugh W. Hitchcock, who has been associated with Packard since 1920 in advertising and merchandising positions.

National advertising, sales promotion, sales training, and national used car merchandising will be incorporated in a new merchandising division under R. W. Straughn.

Barrett Says:

**You're Paying For A
DRUM-Dokter
Why Not Own One?**

**Farmed-out labor eats
profit earned by your
service sales . . .**

**A DRUM-Dokter
automatically machines
drums without attendance
. . . frees skilled labor
for other work.**

**CASH IN NOW . . .
LET US PROVE IT!**

**LOOK at the chart below—
SEE how you are paying
for a DRUM-Dokter . . .
someone else owns.**

GET ONE FOR YOURSELF

PROFITS ON DRUM MACHINING ALONE

IF YOU MACHINE DRUMS ON	Cars Per Week	Income Per Year	Gross Profit At 92%	Profit Buys DRUM-Dokter in Less Than:
	1	\$ 312.00	\$ 287.04	16 Months
	3	936.00	861.12	5-1/3 Months
	5	1560.00	1435.20	3-1/5 Months

BARRETT EQUIPMENT CO. World's Finest Brake Service Equipment
21st & Cass St. Louis 6, Mo.



Mexican Pan-Am Race To Run in Two Classes

The Third Mexican Pan-American Race will be run from November 19th through 23rd. The route this year will be from El Ocotal to Ciudad Juarez—from the southern border to the northern boundary of Mexico—a distance of 2,093 miles. This year the race will be divided into two classes, a sports class and a stock class. Prizes totaling \$85,579 in U. S. currency have been posted. It is expected that the stock class will be dominated by American entries, but the sports class is wide open with the recent entry of two German Mercedes-Benz 300 S1's, and the usual galaxy of European car-racing teams.

sell Soundmaster

MUFFLERS THAT
FIT ALL 3 WAYS

Soundmaster



1

Mechanical Fit

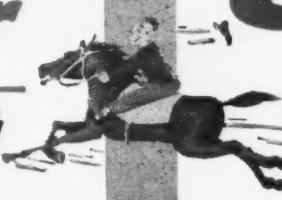
Exact and uncompromising
—for fast installations on
each make and model



2

Acoustical Fit

For full-range noise control
—"comfort-level" quiet at
all speeds and loads



3

Horsepower Fit

Always within correct back
pressure limits—for all the
power the car can deliver

For each make and model you service, your NAPA Jobber can supply a Soundmaster Muffler engineered to *fit that car*—all three ways. For fast, high-profit installations, precision MECHANICAL fit! For long-lasting, full-range noise control, Soundmaster ACOUSTICAL fit! For low back pressure and high engine output, engineered HORSEPOWER fit! Next muffler job you have, install the muffler that really fits the car and all its requirements. Install a Soundmaster!

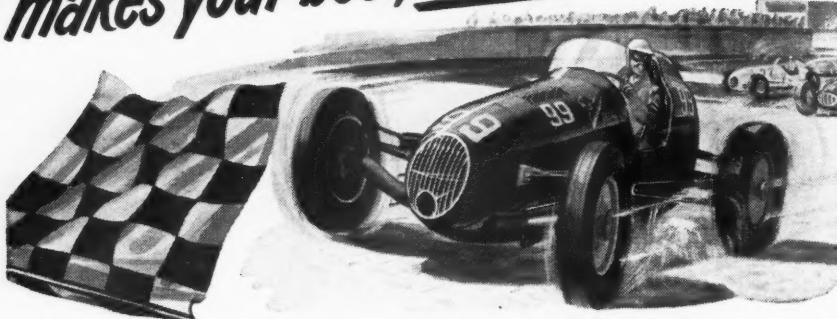
DE KOVEN MANUFACTURING COMPANY • RACINE, WISCONSIN

Soundmaster

MUFFLERS, PIPES, ACCESSORIES



"Competition makes your best, better!"

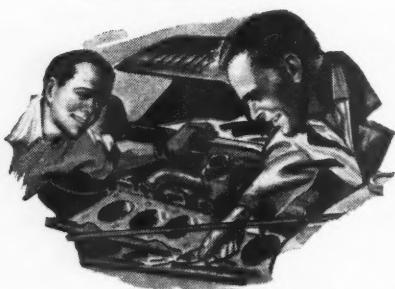


... says Murrell Belanger

A true story—reading time: 1 minute.

"Racing," says M.B., "teaches you the value of competition. It takes more than a well-tuned car to win. It takes men with heart, brains and drive."

At 16 Murrell Belanger got his first job as a car washer. Slack periods found him helping the mechanic, soaking up engine lore, dreaming of better cars that one day would bring him world fame.



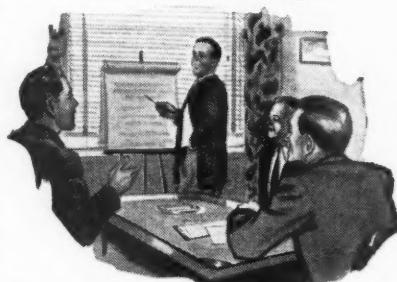
Detroit selling himself as a dealer to factory officials.

The dealership brought new appreciation of the value of competition . . . and men. "It was tough going in the depression years. I can't thank the Chrysler field man enough for his faith and encouragement. When my best just wasn't good enough, he'd get me to do better."

It's natural that back in his mind M. B. carried a burning ambition: to win the Indianapolis 500. In 1951 the Belanger blue-and-gold colors set a new all-time record. He had the car . . . and the men. Lee Wallard was at the wheel. And to prove the combination was no fluke, '99 with Tony Bettenhausen driving won the 1951 A.A.A. Championship.

"I welcome competition," says Murrell. "It keeps me doing better than my best to earn the checkered flag at the finish line."

A booklet of true stories about enterprising men like Murrell Belanger is yours for the asking. Write Chrysler Corporation, Highland Park 3, Mich.



Dealers in Chrysler Corporation products are selected for their integrity, their merchandising skill . . . and their capacity to serve the ever-growing customer preference for the cars and trucks that exclusively offer the superior values of Chrysler Engineering Leadership.

Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS
Fine Cars of Great Value

Patent Applications Easy to File—Fast

Do you have a new device, turned out in your own shop, that will save hours of troublesome exploring by maintenance crews or simplify the task of engine and body repair? Have you applied for a patent on your invention?

If you have, don't despair of getting action on your application. The U. S. Patent Office made a recent count that showed it had, for the first time since 1946, fewer than 100,000 applications awaiting handling.

Official explanation of the smaller backlog of work is "added efficiency of operation" by Patent Office employees, who granted 46,531 patents in the last complete fiscal year. The number of applications received was 64,992.

Other figures produced by the Patent Office for the same 12 months show: New trademark registrations granted totaled 16,400. Earnings in patent, trademark, and service and publications fees amounted to more than \$5 million. The number of printed copies of trademarks and patents sold was 4,329,169.

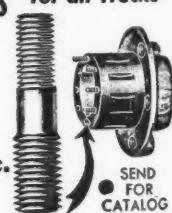
OVERSIZE REAR WHEEL STUDS

for all Trucks

Order from Your Jobber



CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.



SEND FOR
CATALOG

The "Name" Makes Sales Easier



BONNEY FORGE & TOOL WORKS
ALLENTOWN, PENNSYLVANIA

MORAINE

...A TRULY GREAT LINE OF BEARINGS!

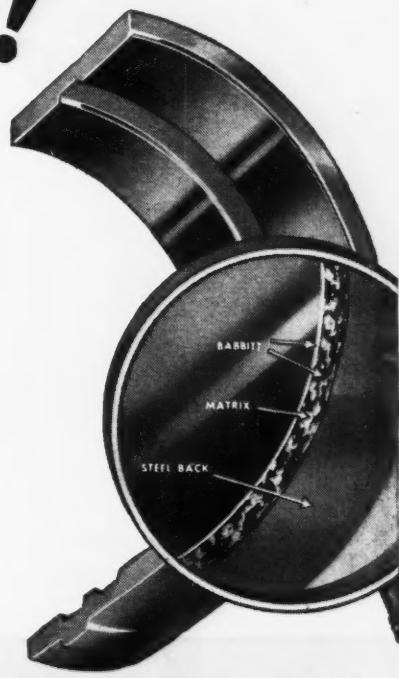
The Moraine engine bearing line is the proved favorite for *original equipment* use . . . and the *pre-sold* favorite of millions of *replacement* buyers . . . because *all* Moraine bearings are of uniform high quality, made to original equipment tolerances.

In addition to the vast number of cars and trucks on the road using original equipment Moraine bearings, there are Moraine engine bearings for an additional 20 million cars and trucks. That makes a big market for Moraine bearings. Think of what your share of that market can be! Stock Moraine engine bearings now and get your share of this market for a top-quality product.

Leader of the Moraine original-equipment line is the exclusive Durex-100 bearing . . . the bearing that is made to stand up under the heavy loads and stresses of today's high-speed, high-compression engines.

The Durex-100 is 8 Ways Better...

1. Greater resistance to fatigue.
2. Increased load capacity.
3. Greater conformability.
4. Better embedability.
5. Stronger bond.
6. Greater resistance to scoring.
7. Greater resistance to corrosion.
8. More durability.



The Bearing High Compression Demanded

DUREX-100

Original Equipment on Cadillac, Buick, Oldsmobile, G.M.C.,
Flexible and Other Leading Makes

THE MATRIX MAKES THE DIFFERENCE!

Steel-backed middle layer (or matrix) of porous copper-nickel is bonded mechanically and metallurgically with babbitt overlay to give Durex-100 increased embedability and greater resistance to fatigue.

MORAINE ENGINE BEARINGS

A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

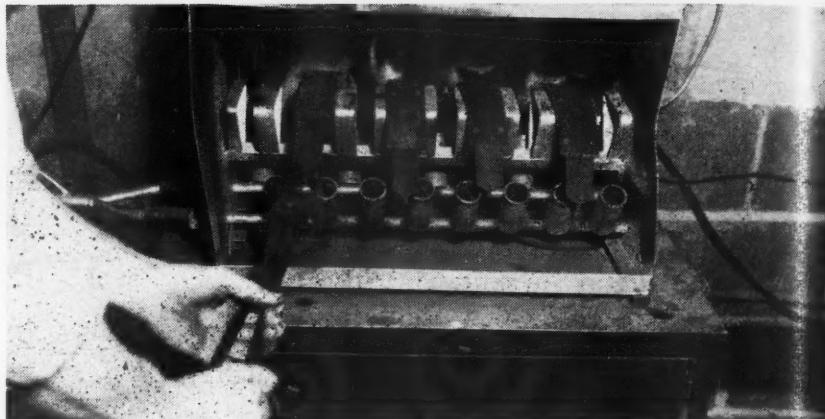
MORAINE PRODUCTS

DIVISION OF GENERAL MOTORS
DAYTON, OHIO

Repair Shop Uses LP Gas To Remove Bonded Lining

Taking off old bonded brake linings used to require 20 minutes of hard work per shoe at the Samuel Ridlon Garage, Portland, Maine. But since the installation of a special liquefied petroleum gas burner system last year, the working time and labor has been cut to just one minute per shoe!

This shop had no brake debonding equipment, and the largest



part of the lining was cut away and the rest ground off, a tedious job. Now a complete set of eight shoes can be done at the same time. The shoes are placed over metal supports, and the LP-Gas burners operate like a series of blow torches to melt the bonding cement. In eight minutes the cement is melted and the old lining can be peeled right off.

The machine cost \$45.00 and the installation was another \$55.00, according to Ridlon. The gas used for heating the shoes is piped from storage containers outside the building. Also known as butane, propane, bottled and tank gas, the fuel has a Btu rating of 2500 to 3200 per cubic foot. This compares with city gas ratings of 450 to 1100 Btu's, Ridlon said.

The Ridlon garage building was built in 1949, but wasn't piped for city gas. Since Ridlon installed the LP-Gas system for the brake lining department he can handle 10-15 sets of shoes per day.



You can build customer good will by eliminating hard starting, stalling, bucking and rough idling caused by dirty carburetors. It's new business, new profits—from an entirely new, low cost service.

Order GUMOUT from your Jobber or send coupon today!

GUMOUT DIVISION
Pennsylvania Refining Company
Cleveland 4, Ohio
Butler, Penna. Edgewater, N.J.
Refiners of Penn Drake Petroleum Products
Since 1880



GUMOUT DIVISION, Pennsylvania Refining Co.
2686 Lisbon Road, Cleveland 4, Ohio MA-7

Please send:

- ... Cases of GUMOUT (24 Pints) at \$71.60 per case
- ... Five-gallon pails of GUMOUT at \$5.20 per gallon
- ... GUMOUTERS at \$2.95 each
- ... Additional information

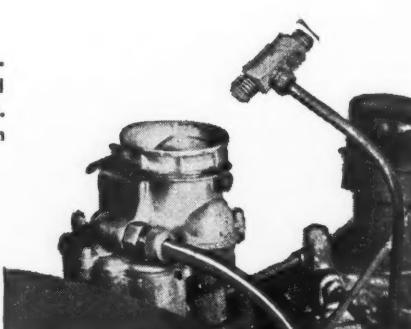
Name.....

Company.....

Address.....

City..... Zone..... State.....

Favorite Jobber.....



here's why
you're ahead
with
AUSCO

**COMPETITIVELY
PRICED!**

Investigate Ausco's new lower prices, that give you an edge on competition.

HIGHEST QUALITY!

Every Ausco Jack is made by Ausco... from castings to finely-machined hydraulic pistons... in the most modern jack plants.

COMPLETE LINE!

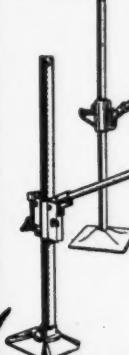
Hydraulic or mechanical... $\frac{3}{4}$ to 20-ton capacities... for service use or re-sale.

**PROMPT
DELIVERY SCHEDULES!**

Complete line of
Mechanical Screw
Jacks for truck use—
Illustrated, $1\frac{1}{2}$ -ton
model with large sled-
type base and fully-
enclosed mechanism. 6
other models also
available.



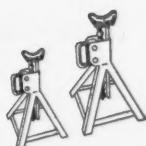
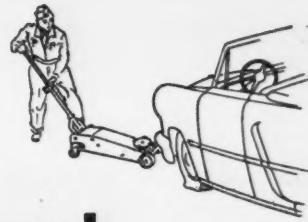
Friction Bumper Jack
—Automatic full-control
release... one-piece
malleable iron body and
load rest. Cap. 1 ton; lift 27".



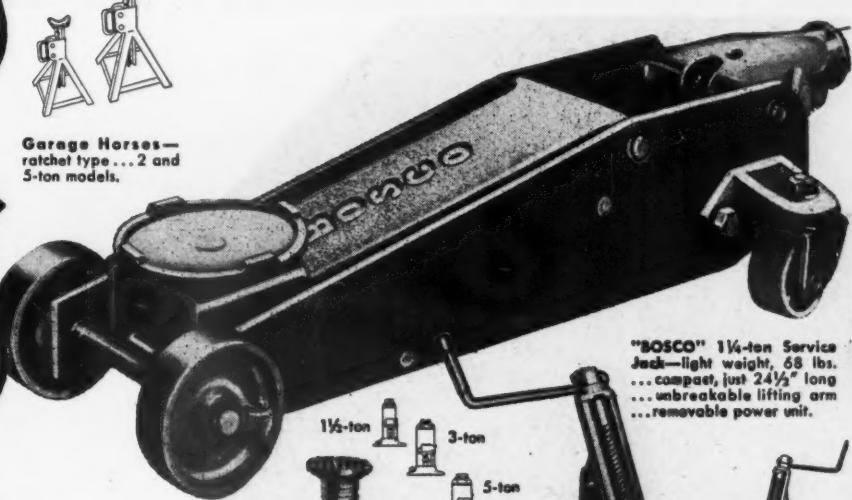
Ratchet Bumper Jacks
—Raise on both up
and down strokes...
broad base for easier
placement. Cap. $\frac{3}{4}$
and 1 ton; lift 32".



for easier service work
...bigger re-sale profits!



Garage Horses—
ratchet type... 2 and
3-ton models.



"BOSCO" 1 1/4-ton Service
Jack—light weight, 68 lbs.
... compact, just 24 1/2" long
... unbreakable lifting arm
... removable power unit.



Hydraulic Axis Jacks
lifting action starts instantly
with first stroke... straight-
line oil flow eliminates dirt-
trapping pockets... easier,
smoother lowering at any
speed... load under com-
plete control at all times.

SAF-LIFT Bumper Jacks—
car owner and service models.
Revolutionary bipod construc-
tion... minimum of moving
parts... low load rest... high
lifting range (24" & 24 1/2").

AUTO SPECIALTIES MFG. CO., ST. JOSEPH, MICH.

? how much ?
PROFIT ?
will you miss next winter ?



Traffic snarls lasting for hours followed "sneak" snow storms in many cities last winter. Most tie-ups were caused by motorists who didn't have chains and couldn't get any!

There's always a chain shortage when sudden storms occur. Don't be caught with your chain supply down! Stock up now on Campbell Lug-Reinforced Tire Chains.

CAMPBELL

*Lug
Reinforced*



Sell chains as you sell anti-freeze, winter lubrication and heater hose. Make it a point to get a set of Campbell Chains in the trunk of every customer's car... before it snows.

CAMPBELL, a top name in chain, offers you this sure-fire program that makes chains easy to sell before the snow flies.



BETTER PRODUCT

You can show your customers the extra metal in Campbell's patented Lug-Reinforced construction. This insures better traction and guards against skids and side slips. When you sell Campbell, you sell the safest, longest-wearing chain!



BETTER PACKAGE

Campbell's modern, colorful, eye-catching package displays well, stores well—keeps chains neat in car trunks. Handy, easy-to-use Chain Applier, at no extra cost, is the sales clincher!



BETTER SALES HELP

The new 1952 Campbell Merchandising Kit contains display banner, ad-mats, streamers, post cards, island and window display suggestions. Contains plenty of ideas to help you make good money selling Campbell Chains this season and ties you in with Campbell's advertising in national magazines. Get complete details from your jobber.

ORDER YOUR STOCK OF CAMPBELL *Lug-Reinforced* TIRE CHAINS NOW!

CAMPBELL CHAIN Company • Main Office: York, Pa. • Factories: York, Pa., and West Burlington, Iowa

TIRE CHAINS

Sell Miracle Power for Winter

MIRACLE POWER SURE
KEEPS THAT CAR YOUNG!



Don't Let Your Engine Get Old This Winter

Mechanics know that most engine wear occurs in winter. That's because oil is cold, stiff, slow to get around to all moving parts. So you have longer periods of DRY STARTING* which causes loss of performance and eventual repair bills.

That's why mechanics say, "Use Miracle Power in gas and oil." Miracle Power contains colloidal synthetic graphite in suspension. This graphite forms a breathlike, protective film on engine surfaces . . . lubricates instantly . . . provides a better compression seal.

Result: You keep your engine young—it starts easier, has more power, uses less gas and oil.

Protect your car this winter—it may have to last you longer than you think. Try Miracle Power next time you get gas.

THE AP PARTS CORPORATION • Miracle Power Division • 111 AP BLDG., TOLEDO, O.
Manufacturers of AP Mileage Gallon, Mufflers and Pipes

This sales message
appears in Post,
Colliers, True and
other leading
consumer publications



AAA
Certificates Use of
Miracle Power
in 1951 and 1952
Indianapolis 500 Races

The AAA certified that the same Miracle Power you buy was used in the "Leightenberger Special" which finished both the 1951 and 1952 races.

During stops, oil drains into the crankcase, where it comes into contact with iron parts. It may take up to 10 minutes before oil returns to all moving parts. Otherwise, dry metal reacts against the metal. This may acid etch surfaces. Engine Ulcers—

Treats the Engine, Not the Oil
Prevents "Engine Ulcers" caused by DRY STARTING*

© The AP Parts Corp., 1952

**Treats the Engine
Not the Oil**

PREVENTS "Engine Ulcers"...

Easier Starting

Mechanics know that light or thinned-out oil does not guarantee easier winter starting. They realize that during long stops oil drains from the engine into the crankcase, leaving parts dry and difficult to move. And they realize that unless the compression seal is good, pressure is so low that gas cannot be heated to a point where it will fully ignite.

To answer these problems, use Miracle Power in gas and oil. Miracle Power contains colloidal synthetic graphite in suspension. This graphite forms a breathlike, lubricating film on all vital engine surfaces . . . gives instant lubrication . . . improves the compression seal. Result: Easier starting . . . satisfied customers.

THE **AP** **Miracle Power Division**
PARTS CORPORATION
1538 AP Building • TOLEDO 1, OHIO
Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123



• CAUSED BY DRY STARTING

Clearing House . . .

Continued from Page 85

and bearings. Also I aligned the case for warping but it still sticks in high gear occasionally. Especially when it is pulled up and shut off and let in high.

Charles C. Hill,
Hill's Garage,
Cantoil, Iowa

IN order to prevent this job from sticking in gear, it will be necessary to either overhaul the shifter cover or install a new one. Usually, you find the shifter blocks worn, thereby causing the sticking.

What Makes Poor Idling In Cold, Damp Weather

Here's a phenomenon that I've tried to have explained. If the weather happens to be damp and rainy or if it is snowing quite hard, the motor on many cars will refuse to idle. This seems to be true only in the above conditions. It makes a car hard to handle, particularly with an automatic transmission.

Perhaps you can give an explanation for this and tell me what can be done for it.

Walter Benz
468 Lowry Medical Arts Bldg.
St. Paul, Minn.

THE trouble with your Oldsmobile is quite common here in the East also. It happens to a lot of cars. This is caused by an icing condition on the idle tube in the carburetor and there is very little you can do. Some of the gas companies claim that their gasoline will not ice but we have had no proof one way or another.

If it were possible to deflect a little heat on the carburetor while the car is warming up, that also would eliminate the trouble.

Rings Freeze in Chrysler Straight-eight Engine

I am having trouble with a 1942 Chrysler Royal 8-cylinder engine. The rings freeze in the grooves after the car has run about 150 hours or 2000 miles. The customer has used various oils and detergents but the rings still freeze in the grooves. I also have two other Chrysler engines that burn valves. New valves have been installed every season. None of these engines run over 140-160 degrees.

Edward McMahon,
Speedway Service Station,
Bayonne, New Jersey

ON your Chrysler that freezes rings at 2000 miles, your trouble is probably due to excessive blow-by or the rings being fit too tight. This block might also be running hot due to scale and rust accumulations.

On the other two engines, that are burning valves, I would suggest that you allow an extra thousandths of an inch clearance on the tappets. Also replace the water tube in the block.

Clearing House . . .

Continued from Page 127

Oil Pressure on These Cars Drop on Acceleration

We have had several Dodges in where we find the oil pressure is 40 while driving at a steady speed. When you step on the gas the oil pressure drops. When you take your foot off the gas the oil pressure comes up again.

Would like to know the reason

for this before I start to work on this car.

Max Kluglin
Smithboro Garage
Route #17
Smithboro, New York

THIS could be caused by not enough oil in the crankcase or a leak in the oil pump pick-up. I would suggest removing the oil pan



DIRECT ELECTRIC DRIVE, SYNCHRONIZED. TWO SPEED OPERATION OF DUAL ARMS. TANDEM OR INDIVIDUAL WIPING MOTION. AUTOMATIC BLADE PARKING. THERMAL CUTOUT PROTECTS WIPER MOTOR AGAINST OVERLOAD.



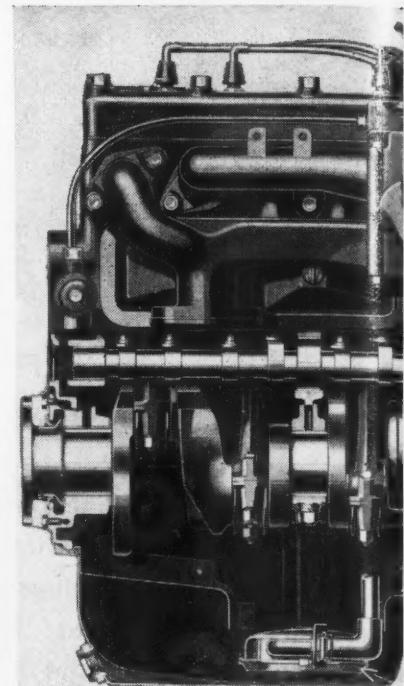
TWIN ARCS OF SAFETY VISION FOR CARS, TRUCKS, TRACTORS. ARMS UP TO 12". LONG. BLADES UP TO 14". 30 INCH/155. TORQUE PER BLADE. WIPING ANGLE UP TO 118°. FOR 6 OR 12 VOLT SYSTEMS.

AMERICAN BOSCH DUAL ELECTRIC WINDSHIELD WIPER

Independent of engine vacuum and regardless of speed, load, or acceleration on up-grades, this powerful, direct electric drive Dual Wiper *always* functions at constant, synchronized speed. No stalling, no stuttering of the wiper blades to cloud good, safe vision of the road ahead, even in the roughest weather.

Ask about Dual Model WWB, a complete packaged unit, designed for swift, easy installation under cowl. Model WWA, for vehicles requiring single Wipers, also available for header mounting. These simplified sales-active conversion units are of rugged, heavy-duty American Bosch construction which guarantees years of trouble-free service. Already in wide use as original truck equipment, these Wipers are today's positive answer to good vision in bad weather and a real opportunity for you to sell greater safety at a profit. Write now for application data on the many passenger cars and trucks you can service. American Bosch Corporation, Springfield 7, Mass.

AMERICAN BOSCH



and the floating screen. Examine the float arm and float for leaks. Also the relief valve might be sticking.

Brake Troubles On a 1948 Ford F-7 Truck

I have a late 1948 Ford truck, Model F-7, with brake trouble which acts as though the brake shoe is too far away from the drum. The shoe has been set close as it can be set without rubbing the drum. It acts as though it had air in line but it has been bled in two places on the power unit and all four wheels, but it doesn't seem to help. The pedal has to be pumped about two or three times before it takes hold.

The front brakes are adjusted in the usual manner on the Lockheed type, but the rear has two eccentric anchors which I turned outward at the top.

Jack Koizumi
Jack Koizumi Garage
Waurika, Okla.

SINCE the brakes have been bled and adjusted with no results, I am inclined to think the trouble is in the master cylinder. I would suggest doing an overhaul job on this unit. Also, when bleeding, start at the wheel farthest away from the master cylinder and work

(Continued on page 130)



THE GRIZZLY BEAR PROMOTES YOUR BUSINESS MONTH AFTER MONTH!

In the pages of the Saturday Evening Post and Collier's, the lighthearted antics of Grizzly's "precautious" bears are encouraging millions of motorists to take better care of their brakes... and to come to *you* for the finest service!

This lively national advertising is but one example of Grizzly's continuous program to help you sell!

Grizzly Manufacturing Company, Paulding, Ohio.

The finest merchandising materials in the business—these Grizzly catalogs, mailing materials, signs, help to keep your shop busier—make your profits bigger!

Clearing House . . .

Continued from Page 128

around to the nearest. You might try using an axle type lining grinder. This tool will insure getting a perfect adjustment on all the wheels.

Problem on Chrysler Cars Blowing Distributor Caps

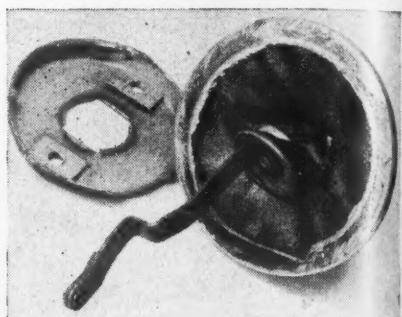
I have a 1949 Chrysler, a '49 Dodge and two '49 Plymouths.

which blow the distributor caps when starting. I have replaced the distributor cap springs. Since these models have no holes in their distributors, I have drilled two holes in each cap. This has not remedied the trouble.

William Jeddelloh
New Richland, Minn.

To prevent the distributor cap from blowing off the Chrysler

products, I would suggest installing new vacuum advance units. The old units have become porous.



therefore letting the gas fumes get inside the distributor. Before installing these units, drill a $\frac{1}{8}$ inch hole in the back of the unit to provide ventilation.

Transmission Trouble on This 1951 Ford

We repaired a 1951 Ford that had the low gear stripped. We installed a new shaft that goes into the clutch disc, the cluster gear and low speed sliding gear. Then we put it together and now when you start it up, it whines in low gear, second and reverse, but high sounds all right. It seems to bind when the four bolts are tightened that hold it to the flywheel housing. When we shim it on the left side and take this whine out, it shifts hard.

Hunter Garage
Waukee, Iowa

If the transmission gear turned freely before installing it in the chassis, your trouble is most likely due to misalignment between the flywheel and the transmission. I would suggest mounting the dial gage on the flywheel so it will check the run-out at the housing. Then add shims to the low spots of correct thickness. Sometimes it is necessary to relocate the flywheel at the block.

Fine Film

An exceptionally interesting technicolor film has been made available to trade groups and other organized groups by Chevrolet. Picture entitled, "American Harvest" is a panorama of industrial activity in the United States. The central theme being the team work of people all over the country—in farms, in mines, in textile mills, in oil fields and in factories.

Pennzoil—accepted from coast to coast as the sign of quality motor oil—offers you a ready market for the complete line of Pennzoil products.

Pennzoil quality satisfies the most exacting customer, answers every lubrication need. It means a fast-selling, low-investment "one-brand" lubrication inventory. And proved Pennzoil merchandising programs, together with consistent nationwide advertising, create extra profit opportunities by developing new customers—steady customers.

Don't miss these profits! Get the facts from your nearest Pennzoil distributor or write us for his name today.

THE PENNZOIL COMPANY • OIL CITY, PA.

KELSEY-HAYES

POWER-BRAKING

Leads in Safety and Ease of Operation!

BRAKE

THROTTLE

feather-touch

It's the Kelsey-Hayes
"Vacdraulic" Brake Power Booster
for "Feather-Touch" Control.

Proven Superior for right
or left foot low-pedal operation!



ASSURES PROVEN PRODUCTS AT

KELSEY-HAYES WHEEL COMPANY
DETROIT 32, MICHIGAN

PRODUCTS: Wheels—Hub and Drum Assemblies—Brakes—Vacuum Brake Power Units—for Passenger Cars, Trucks, Buses—Electric Brakes for House Trailers and Light Commercial Trailers—Wheels, Hubs, Axles, Parts for Farm Implements.
PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.



Here's why you can have in Johns-Manville ASBESTOS



Now...and

IN SELLING A BRAND of brake linings, you should be able to place your *full confidence* in the manufacturer whose product you offer to your customers.

Behind that brand there should be a line of quality products to meet all your requirements . . . a policy that offers you these quality products at a price that assures you adequate profit . . . a company whose reputation assures outstanding consumer acceptance in your market . . . with sales and merchandising policies that help you build sales . . . a company that is constantly investing and planning for the future.

Johns-Manville has 95 years of experience manufacturing asbestos products and has pioneered in the development of brake linings since early in the century. This "know how" is your assurance that all the foregoing confidence-building assets are inherent in the J-M Friction Material Franchise.



Johns-Manville *asbestos*

Confidence

BRAKE LININGS

for the future!

And now, with even greater intensity than ever before, Johns-Manville is backing its customers with a continuing and expanding research program . . . with added production facilities . . . with the broadest national advertising program in the industry . . . and with sales aids for local dealer advertising.

You should look into this confidence-building Johns-Manville program and learn more about the outstanding position of Johns-Manville in the friction materials business *now . . . and for the future!* For further information, write to Manager, Automotive Department, Johns-Manville, Box 60, New York 16, N. Y.



5. Its broad national advertising—

Johns-Manville has the broadest national advertising program in the industry . . . backed by local point-of-sale programs.



6. Its name acceptance—

The Johns-Manville name—known to millions for quality—helps you build volume and profits!



FRIC~~TION~~ MATERIALS

Service Suggestions

Engine Oil Capacity on Nash Statesmen and Rambler

1952 Statesmen and Rambler series now have a recommended oil capacity of 4 instead of 5 quarts. The manufacturer reports that engineering tests reveal that the 4 quart capacity is entirely satisfactory and that increased oil

mileage will result. This is said to be particularly true of the 1952 Statesmen series engine with the 4 1/4 inch stroke. The longer crankshaft throws cause more turbulence in the crankcase which often results in lower oil mileage. The dip stick, oil pans, etc. were not changed. The correct oil level indication is accomplished by

pressing the oil filler and breather farther into the cylinder block. Oil capacity of the early production 1952 Statesmen engines can be revised by relocating the oil filler tube, which can be tapped into the cylinder block to the new location. Correct location can be made by completely draining the engine oil pan and refilling with 4 quarts of accurately measured engine oil. The filler tube can then be tapped into the block until the full mark on the dip stick is indicated. Filler tube change on the early production Ramblers is not recommended because of interference with pedal linkage. In production it was necessary to revise the throttle linkage to obtain sufficient clearance.

In all cases where engine oil capacity has been changed to the new recommendations, the owner must be informed of the change.

Make V-8 valve grind jobs Pay Off and Get a Double Profit by Installing JOHNSON adjustable tappets



It's easier to sell tappets when the head is off. And you can make a double profit with less work by recommending Johnson Adjustable Tappets with your valve grind jobs. During a valve grind, lift out the old tappets and slip in Johnson Tappets. As simple as that you can make this double profit and save the hard work of grinding off valve stems.

Your customer is better satisfied because you can adjust Johnson Tappets to give him a smoother, quieter engine. Adjustment is simple. Special spanners included with each set of tappets leave both hands free to make faster, more accurate adjustments. Once you've set the patented self-locking screw, Johnson Tappets will maintain the setting.

There's more profit for you if you sell Johnson Adjustable Tappets with every Ford and Mercury V-8 valve grind. Order a supply of Johnson Tappets today.

SEE YOUR JOBBER!

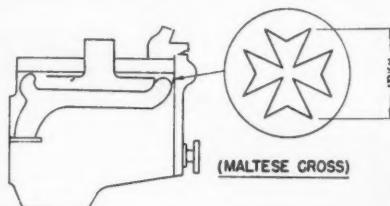
"Tappets Are Our Business"

JOHNSON  **PRODUCTS**
INC.

MUSKEGON, MICHIGAN

Six Cylinder Chrysler Engine Identification

Occasionally six cylinder Chrysler engines may be released with one or more connecting rod or main bearing journals finished .001 inch undersize dimension. When a six cylinder engine contains an undersized crankshaft, the engine may be identified as shown. On the outside, a maltese



cross is stamped on the cylinder block of the upper front corner of the machine face surface, signifying that the engine contains a crankshaft with one or more journals .001 inch undersize. On the inside, the position of the journal or journals, which are .001 inch undersize, will be stamped on the machined surface of the crankshaft center counter-weight, as shown here. The connecting rod journals are identified by the letter "R" followed by the rod journal number. Thus "R-1" would indicate that No. 1 journal is .001 inch undersize. Main bearings

(Continued on page 136)

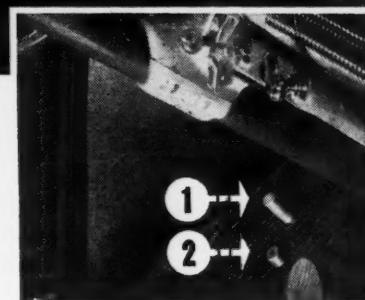


DRIVER VISION CLEAR—The new Guide Autronic-Eye is mounted just behind the windshield in lower left hand corner.

Headlights "Think for Themselves" with

AMAZING NEW GUIDE AUTRONIC-EYE

it sees...it protects...it performs



SWITCHES. 1. The auxiliary switch depressed momentarily signals the oncoming car that has headlights on the upper beam (bright). 2. Standard car "Dimmer" switch. One position places headlights under automatic control; other position keeps headlights on lower beam "Dim."

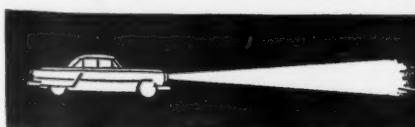
The new Guide Autronic-Eye never relaxes its unceasing guard. It sees...it protects...it performs. And this uncanny device makes a revolutionary contribution to the convenience, comfort and safety of night driving.

At each dark stretch of highway, the Autronic-Eye flicks headlights to their upper beam. But with an approaching car the Autronic-Eye changes them to "dim" for courteous and safe driving. A whole line of cars may pass while the Autronic-Eye holds lights lowered. Then, the instant the road ahead is clear, up they flash to bright again.

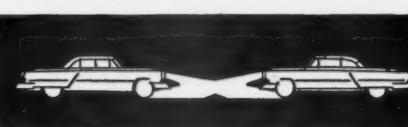
The driver need only drive, his mind free of the constant nagging fatigue and worry caused by the demands of continuous light control.

And all this is automatic—accomplished through the electronic photo tube which is the heart and mind of the Guide Autronic-Eye.

At present this great new Autronic-Eye is factory-installed at extra cost on 1952 Oldsmobiles and Cadillacs only. Guide Lamp Division, General Motors Corporation, Anderson, Indiana.



ON THE OPEN ROAD the Guide Autronic-Eye automatically keeps headlights on the upper beam.



A CAR APPROACHES and the Guide Autronic-Eye automatically drops headlights to "dim."

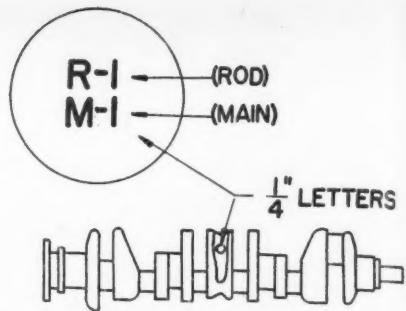


THE CAR SWISHES BY and the Guide Autronic-Eye flicks headlights back to "bright" automatically.

Service Suggestions . . . Continued from Page 134

journals will be identified by the letter "M" followed by the journal number. Any combinations of the above marking may be encountered and .001 inch undersize bearing should be used in the positions indicated. The letter "A" immediately following the engine number, indicates that all bores are .020 inch oversize.

A similar method of identification is used for V-8 engines. A maltese cross stamped on the engine number pad on the cylinder block following the engine number, indicates that the engine contains a crankshaft with one or more undersized journals. The positions of journal or journals which are .001 inch undersize will



be stamped on the machine surface of the No. 3 cutaway. Rod journals are identified by the letter "R" followed by the journal numbers and main bearing journals are identified by the letter "M" followed by the journal numbers.

How to Make Grinding Equipment Last Longer

Aluminum cylinder heads can be ground with a smooth, fast cut by using stick lubricant of the type made for door lock mechanisms. It reduces loading of the cutting wheel so that it stays "true" longer. It is also good for use in all high speed grinding, drilling, or cutting where circulating lubricants are not used.

Shift Mechanism Adjustment On Nash

In some cases, on the 1950-51 Rambler series, difficulty has been encountered in correctly adjusting the shifting mechanism due to misalignment of the pinholes. The first type gear shift bearing housing assembly may be revised as shown in the illustration. Then install revised housing just tight

(Continued on page 138)

The Gold Rush is On!!!

No. 777-5-6—"the hard-sleeve bar."

4-year-old Engines are flocking in for overhauls . . .

Rebore them for Profit with

Van Norman Boring Bars!

Here's the way to make more money NOW! . . . sell more service to the millions of owners of 4-year-old and older cars, trucks, buses and tractors, that are going to be in service a long time yet. Sell complete overhauls . . . complete motor-rebuilding jobs. And start with the basis of all quality jobs . . . rebore with a Van Norman Perfect-O Bar. This is the quickest and easiest bar to operate . . . the only bar with the 4 "Cat's Paws" that support the cutter all the way down . . . to a perfect job in one quick cut per cylinder.

So get set for big profits now, with the Van Norman Bar you need for your work . . . "the bar that sells more service". See your jobber or write Van Norman Co., Springfield 7, Mass.

A Van Norman Bar for Every Job

944-S—the light, fast, portable bar with Sucker-Outer for car dealers, garages, service stations.

777-S—the portable bar with Sucker-Outer for cars, trucks, buses, tractors, marine engines, etc.

888-18—one of the giant bars, for heavy trucks, big diesels, all heavy-duty work.

The Best-Equipped Shop Gets the Business!

that's why "It Pays to Van Normanize"



GET 50%
MORE
PROFIT
ON YOUR
UNDERCOATING
JOBs



LION *Nōkōrōde*
 UNDER-CAR SEALER AND SILENCER

**1. 50% More Jobs
 Per Drum**



**2. Easier Application...
 Lower Labor Cost**



Nokorode is *concentrated*—no excess solvent. You spray Nokorode to $1/16$ " thickness—and it dries to almost $1/16$ ". It's made *entirely* by Lion under U. S. Patent 2393774, assuring *controlled* uniformity, *controlled* quality. Nokorode goes 50% farther, yet costs no more than ordinary undercoatings. That means 50% more profit for you.

Nokorode is *uniform* for smooth application—no troublesome "blobs" ... flows freely permitting steady pressure in the gun. There's no lost time due to lost pressure.

Nokorode is *stable*, made of highly compatible materials—won't separate in storage, won't clog guns or hoses. You avoid unnecessary clean-up jobs—you save man-hours and money.

Made and Guaranteed By

LION OIL COMPANY
 EL DORADO,  ARKANSAS

FREE! Details on how to increase undercoating profit.

LION OIL COMPANY
 El Dorado, Arkansas

Please send information on higher profits with **LION NOKORODE**.

Name _____

Address _____

City _____

State _____

enough to provide movement of the assembly for adjustment. Assemble the gear shift operating shaft, levers, etc. into the housing. Locate the bearing housing properly on the jacket tube to provide the clearance $1\frac{1}{2}$ inches between the gear shift lever and the steering wheel when the shift lever is raised for a shift into low.

Install the aligning pin, check the cross-over for correct operation and tighten the "U" bolt to maintain the correct bearing housing location. Adjust the gearshift rods at the transmission. Check the operation of the shifting mechanism for complete engagement in all gears. If there is insufficient travel in second gear, the

steering jacket tube may be loosened and turned slightly clockwise.

Rubber Lube Used for Cleaning Battery Terminals

The rubber lubricant which is used for spraying on rubber shackle bushings, and so forth, is also good for cleaning off accumulations of battery terminals and to retard its recurrence. It seems to cause a change in the corrosive metal which is usually coated with sulfuric acid. The coating which is left acts as a retardant for future corrosion.

Headlamp Rim Installation On '52 Ford Car

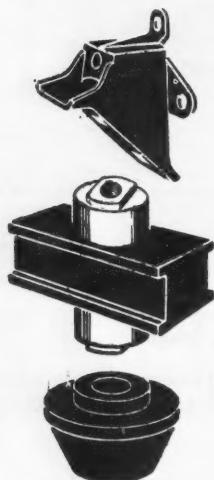
To obtain a tight headlamp rim installation on 1952 Ford cars, the factory suggests that the installation be made in the following manner:

Check the clearance between the rim upper retaining clip and the fender. If the clearance is greater than $1/16$ in. bend the clip backward. Never bend the clip forward to make installation easier. Be sure that the two rim spacer slips (part No. 1a-13058-A) are properly installed. The clips should be installed with the short offset portion of the legs of the clips toward the head lamp as shown.



Motor Mounts Can Cause You Trouble

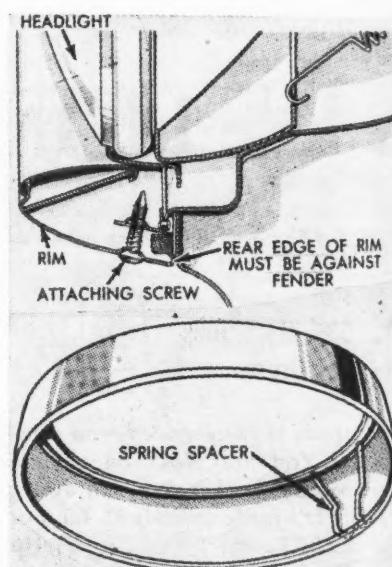
if not replaced on time!



Most mechanics have learned that it doesn't pay to fool around with faulty motor mounts. They know that mounts can cause clutch chatter, motor misalignment and excessive vibration. The smart mechanic can spot the trouble blindfolded. The only safe engine mounting is one that is in perfect condition—one that performs the job for which it was intended with 100% efficiency. Anything less than a perfect motor mount may mean serious trouble.

Install Armor-Flex Motor Mounts. They're made of strong, pliable rubber permanently bonded to brass-plated metals.

Doan MANUFACTURING CORP.
1761 LONDON ROAD • CLEVELAND 12, OHIO



Push firmly on the top of the head lamp rim to seat the retaining lip behind the clip. Then push in on the bottom of the rim so that the lip passes over the edge of the lower retainer and rests on the flat section of the retainer. The rim should now contact the fender.

The Ford Owners have sure discovered my shop!



**I'm getting more of their business
since I hung my Genuine Ford Parts sign!**

The Genuine Ford Parts sign is a symbol of good service to Ford owners the country over! They know that Genuine Ford Parts are available through the garages and service stations that display it. And now that this sign is being backed up by hard-hitting advertising in LIFE and many other magazines, it will mean even more business than ever!

Let's Get Acquainted

Your Ford Dealer wants to get acquainted with you. He wants to help you with your parts problems. Drop in and see him for some helpful, parts-selling hints.

FIND OUT HOW YOU CAN GET THIS SIGN!

MAIL THIS COUPON NOW!

PARTS AND SERVICE SALES DEPARTMENT

Ford Division, Ford Motor Company, Box 658, Dearborn, Mich.

Please send me complete information telling me how independent garages can get a Genuine Ford Parts sign. I'd like to cash in on this, too!

FIRM NAME _____

INDIVIDUAL'S NAME _____

ADDRESS _____

CITY _____ **STATE** _____ **H** _____

Tips on Timing . . .

Henry J
Hudson
Kaiser
Nash

Henry J

All models of the Henry J's use a gear. The arrangement is such that unless the gears are badly worn or seriously damaged, it is unlikely that the valve timing will be affected. Remove the timing case cover and unbolt the camshaft gear. Pull the crank gear off the shaft.

Press the new crankshaft gear on the shaft, being careful to align the key in the key way perfectly since the gears are tight fit on the shaft and it is perfectly difficult to correct it for misalignment after the gear is started. Turn the crank gear until the marked tooth on the gear is pointed directly to the cen-

ter of the camshaft. Tentatively mesh the camshaft gear with the crankshaft gear, so that the two marks on the cam gear straddle the one mark on the crank gear. Rotate the camshaft so that the bolt holes line up properly and install the bolts and locking plate.

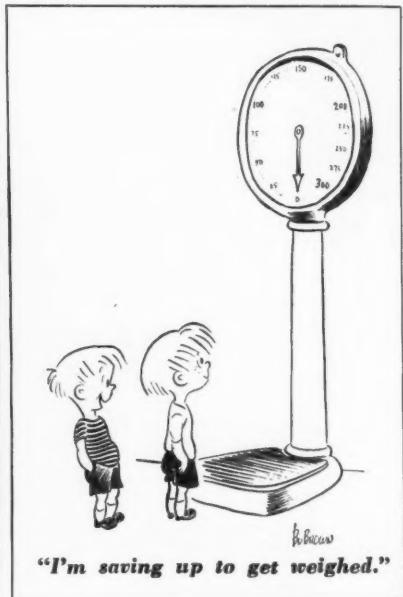
Hudson

Hudson engines except the 1948 to 1951 six cylinder models are equipped with gears. The cam gear has two punch marks and one punch mark on the crank gear. When setting the timing for the valves the punch mark on the crank gear should come in between the two punch marks on the cam gears. Camshaft gear is held on with three bolts. Remove three bolts and gear will slide off. When in-

LISLE CORPORATION
BOX 1024 CLARINDA, IOWA

it's a good tool...it's a

JEEPERS CREEPER now sold exclusively



stalling put the one mark on the crankshaft gear so that it points directly between the two marks on the camshaft gear. Then turn the crankshaft two full revolutions until the gear again assumes its checking position. A single mark between the two marks on the cam gear, the timing must be correct. It may, however, be necessary to retime the ignition. On 1948 to 1951 models where a chain is used, remove the timing case cover and then unbolt the camshaft sprocket. Remove the sprocket and timing chain as a unit. If it is necessary to remove the crankshaft sprocket do it at this time.

(Continued on page 142)



Brake lining companies say it...

Top mechanics say it... Fleet owners say it...

"Whenever you take out an oil seal,
always replace it with a new one..."

With National service stocks, you have the right seals when, where you need them. Cabinet comes with the deal, jobber keeps stock up. Stocks "tailored" for different needs. Ask your jobber, today!

Service stocks to fit your needs



#5512. For lube stations. 58 popular front wheel seals.

#5511. For garages. 114 fast-moving front, rear seals.



Support this
industry-wide
program...

...and be sure the new seal is a National!

You'll do a better job in less time. And if you take a moment to show him, the car owner will appreciate it. Keep an old seal on hand. Show the customer where wear occurs, explain how important new seals really are. You'll make a friend of the car-owner and build your reputation for good work. Replace with new National Oil Seals—every time!

NATIONAL MOTOR BEARING CO., INC.

General Offices: Redwood City, Calif. Plants: Redwood City, Calif.; Van Wert, Ohio

2394

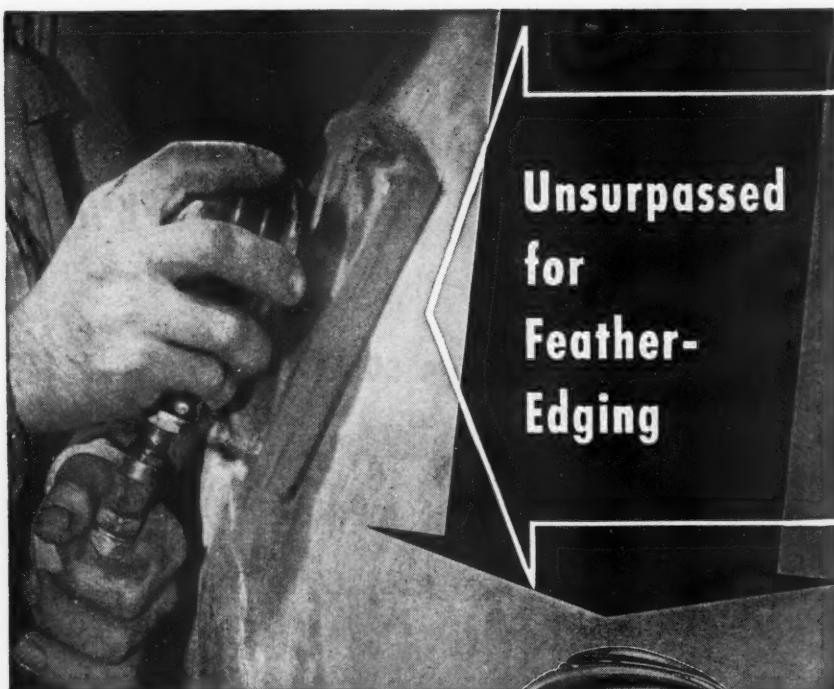
NATIONAL
OIL AND GREASE SEALS

Approved original equipment for all cars, trucks,
buses and tractors.

Tips on Timing Continued from Page 140

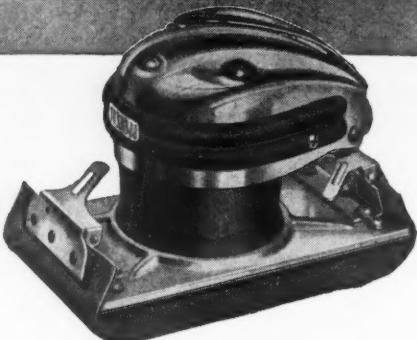
Press on a new crankshaft sprocket since it is very difficult to correct for misalignment after the sprocket since it is very difficult to correct for misalignment after the gear is started on the shaft. Mount the chain over both sprockets. Then push the camshaft sprocket on to the shaft and bolt into place, being careful to maintain the re-

lationship between the timing chain and sprockets. Turn the crankshaft two full revolutions until the timing marks are again in the checking position. Timing is correct when there is eight links of the timing chain between the mark on the camshaft sprocket and the mark on the crankshaft sprocket, counting the link at each mark.



NATIONAL Model 400

"Mity-Midget"



Feather-edging . . . ordinarily it's a slow, tiresome, touchy job . . . but with National's Mity-Midget it is fast and easy. This convenient, air driven block sander weighs only 4 pounds. It fits the hand comfortably, and because it is vibrationless, can be used for hours without tiring the operator. Making 4000 to 6000 orbital strokes per minute, it cuts sanding time to a minimum, and allows you to finish more jobs per day. Write for details.



Or See Your Jobber

NATIONAL AIR SANDER, INC.
2820 AUBURN ST., ROCKFORD, ILLINOIS

Kaiser and Fraser

Timing chains are used on these jobs and to replace, remove the radiator and timing case cover. Take off the camshaft sprocket retaining nut, remove the camshaft and crankshaft sprockets together with the chain as a unit. Set up a new sprocket and chain on the bench in the position that they occupy in the car and arrange the chain so that there are ten pins of the timing chain between the marks on the camshaft sprocket and crankshaft sprocket, counting the pin at each mark. Install the gears in their position and then crank the engine two full revolutions and recheck.

With the timing chain set up in this manner the valves are correctly timed regardless of which piston is at top dead center. It might be necessary to retime the ignition after resetting the valve timing.

Nash

Remove the timing case cover, turn engine until crankshaft sprocket is toward the crankshaft and both marks lie on a straight edge between the centers with the intake valve open. To recheck the setting, set the mark tooth of the camshaft sprocket approximately to the one o'clock position. This should place the mark tooth of the camshaft sprocket where it begins to mesh with the chain. It should be $9\frac{1}{2}$ links or 19 pins between the marked teeth of both sprockets.



"I'VE BEEN 'BURNED'"

for the last time!

Time and again I've fallen for undercoats boasting individual features that are supposed to be terrific. I've bitten for the last time. Well, now I

know Martin-Senour Undercoats beat 'em all. Why? Because they're balanced.

They give you the five features that mean a first-class paint job.

You get perfect adhesion to bare metal or old finish.

Filling qualities are excellent. Martin-Senour Under-

coats dry a heck of a lot faster and make sanding

far easier. What's more, you get the best

color holdout. Add all this up and you see

what I mean when I say Martin-Senour gives the car

refinisher balanced-formula primer surfacers.

All Martin-Senour Undercoats Give You These 5 Balanced-Formula Benefits

- 1. Maximum Adhesion
- 2. Excellent Filling Properties
- 3. Fastest Drying
- 4. Easiest Sanding
- 5. Best Color Holdout

Martin-Senour primer surfacers contain no graphite. They have unexcelled resistance to moisture and humidity, highest rating on

resistance to cracking, finest adhesive qualities. Available in agitator drums.

6252—Light Gray

6255—Dark Gray

6256—Red Oxide



"Martin-Senour Undercoats are the best I've ever worked with," says Gene Struble, Gene's Auto Body Works, Haskell, N. J.

"We use all three types of Martin-Senour Undercoats in our shop. That way we know we're getting a base for the finish coat that is tough and durable. You can tell by the way they fill, dry and hold out that you're putting on real protection for the finish coat, protection that works from the inside out."

See your N.A.P.A. Jobber for Martin-Senour Undercoats

MARTIN-SENOUR

2520 South Quarry Street, Chicago 8, Illinois

Factory Packaging...the only positive control from Factory to Finisher



EXTRA WEAR NO EXTRA



Extra wear life because Leak-Proof rings are *Altinized*...which means they prevent scuffing and premature wear. *Altinizing* is a natural bearing material which assures quick seating due to its built-in lubricating qualities.

Remember: you get this extra wear life at NO extra cost...and only McQuay-Norris rings are *Altinized*.

McQuay-Norris Manufacturing Company

St. Louis 10, Missouri



McQUAY - NORRIS

LEAK-PROOF
REG. U. S. PAT. OFF.

PISTON RINGS

Made for the
Toughies!

THIS SET WILL OUTPERFORM
"HARD TO HOLD" JOBS

LIFE AT COST!



CHROME
CONTROL

LEAK-PROOF
REG. U. S. PAT. OFF.
PISTON RINGS

with the

NEW "400" OIL RING

ANY OTHER PISTON RING SET IN THE
REGARDLESS OF KIND, DESIGN OR PRICE

Racing News

As we go to press Troy Ruttman still holds the lead in the National Championship Point standings. He has a total of 1410 which he earned by winning the 500-Mile Race at Indianapolis, the 200 miler at Raleigh, North Carolina. At Springfield, Illinois, he finished in twelfth position. His nearest rival now is Chuck Stevenson. Steven-

son jumped into second place by finishing second to Bobby Ball at Denver, Colorado, on October 28. Stevenson needs only a fourth place finish in one of the two remaining championship events to take over the lead. But it won't be easy as Troy Ruttman, who was injured in August at Cedar Rapids, Iowa, has been released

from the hospital and will race at San Jose, California, November 2. That is providing he can pass the medical examination.

Duane Carter, in third place with 1220 points, still remains a serious threat if he can get medical permission to race in the last two races. Only three other drivers who have a mathematical chance at the crown are Sam Hanks, Jack McGrath and Jim Rathman.

Bill Shindler, who was a very consistent performer in both midgets and big cars, lost his life in Allentown, Pa. He was among the leaders when the car in front of him lost the rear axle assembly. Before Shindler could see it, he ran head-on into it, making him lose control of his car and crash through the fence.

Records were broken in almost every race this year. At Indianapolis, Chet Miller established a new one-lap and four-lap qualifying record. Troy Ruttman, Bill Vulkovich and Jack McGrath set new records from five miles to 500. At Milwaukee, Jim Rigsby set a new one-mile record and Mike Nazaruk set a new 100-mile record.

At Raleigh, North Carolina, Chuck Stevenson set a new one-lap record and Troy Ruttman set a 100-mile and 200-mile record.

At Springfield, Mike Nazaruk set a new one-mile record and Bill Shindler set a new 100-mile record. At Syracuse, New York, Jack McGrath set a new 100-mile record.



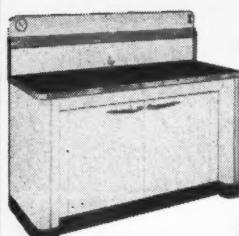
Wilbur Shaw presents the Irish Horan Achievement award to Don Cummins, Vice President of the Cummins Engine Company. The trophy was presented in recognition of the company's contribution to Automotive progress as exemplified by Freddie Agabashian's (left) success in winning the pole position for the 1952 Indianapolis race. At the far right, standing next to Wilbur Shaw, is Irish Horan.

SHURE BUILT SERVICE EQUIPMENT MAKES YOUR SHOP . . .

*Departmentized
Clean
Efficient*



MODEL 9100
SERVICE
WORK
BENCH



Exclusive Nat-Flex* bench top is a non-conductor. Resists oil, grease, water. Complete with air hose, blow gun and parts washer. Available with sliding doors—Model 9150. *T.M. Reg.

"LOW BOY" SERVICE MERCHANTISER

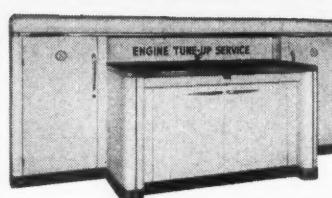


Photo shows MODEL 9205.

Service Merchandisers available in 48" and 60" heights; choice of 54", 60", or 72" bench lengths; swing-out or sliding bench doors.

MODEL 9332
SERVICE DESK



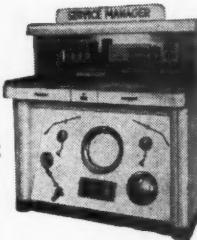
Attractive, efficient-looking, all-steel write-up desk. Large, inclined top measures 26" x 38". Full back. Smooth acting drawer and huge cabinet for manuals, tools and testing equipment. Comes complete with fluorescent light and lettering.

Above items shipped factory assembled.

ASK YOUR JOBBER OR WRITE US
FOR DESCRIPTIVE INFORMATION
ON COMPLETE LINE OF SHURE-BUILT EQUIPMENT

Contract items made to specifications . . . phone, write or wire

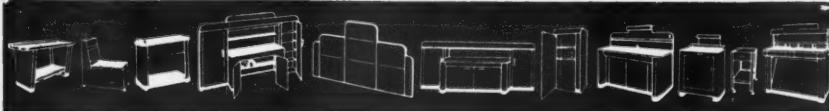
MODEL 9320
SERVICE
MANAGER'S
MERCHANTISER



Sells profitable accessories and chemicals. Lighted shelves and inclined panel. Space for job tickets, records and manuals.

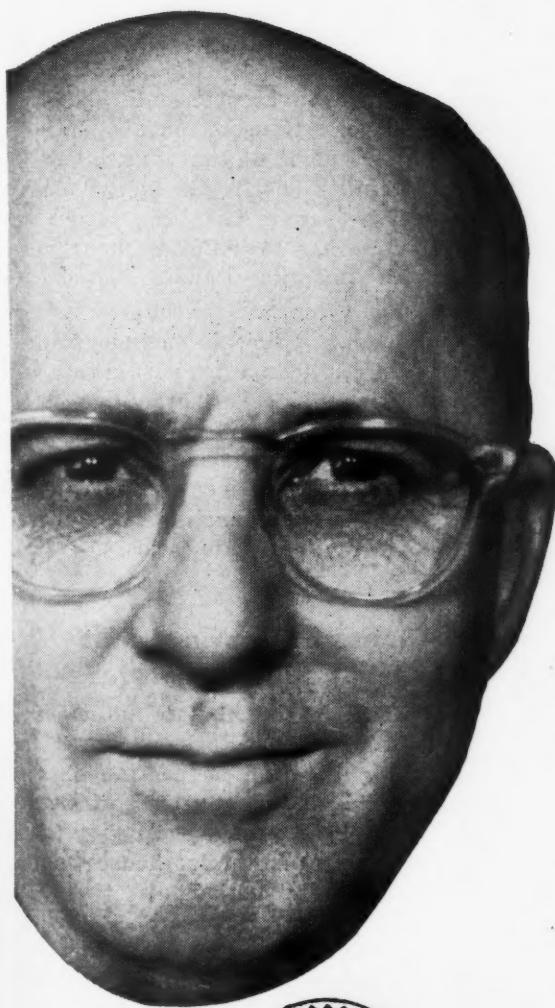
Shure

MANUFACTURING CORPORATION
1601 S. HANLEY RD. • ST. LOUIS 17, MO.



In cars with hydraulic valve lifters, too, test experts agree...

"Purelube improves engine performance!"



**Says Charles E. Bosse, Hauser Nash,
La Grange, Illinois**

Mr. Bosse is one of the 170 service experts who made the "hidden name" test. He drove his 1947 Cadillac over 1,000 miles without knowing the oil in his crankcase was Purelube, the sure motor oil.

Mr. Bosse is also one of the 148 experts (87%) who reported Purelube improved engine performance in one or more ways! He writes:

"I'm especially critical of oil. Not just because taking care of cars is my business, but because I drive a car with hydraulic valve lifters. After 3 or 4 miles of city driving with your test oil, I noticed much smoother and quieter engine operation. During the test I increased gas mileage and used less oil. I need an oil change now but prefer not to change until I can get more of your test oil."

Note Mr. Bosse's reference to *hydraulic valve lifters*. His report confirms laboratory and road tests that prove Purelube is outstanding in the whole combination of qualities needed to keep *any* engine clean . . . efficient . . . longer lasting. Purelube quiets hydraulic valve lifters! Frees them up! In all qualities, including detergency, Purelube meets and exceeds "heavy-duty oil" requirements of passenger cars.

Satisfy your customers and build profitable repeat business. Use Purelube in your service department and recommend Purelube when you sell a car.

Remember, car dealers who stock Pure Oil products get free service . . . sales . . . and advertising helps under Pure Oil's business-building Plan for Car Dealers.

See your Pure Oil salesman or call your local Pure Oil office today.

The Pure Oil Company—General Offices: 35 E. Wacker Dr.

Be sure

with Pure



Pure Oil's complete car dealer line, headed by Purelube, the sure motor oil, includes high-quality oils for house branding, approved automatic transmission oils, gear and chassis lubricants and TBA.

Purelube

THE SURE HEAVY-DUTY OIL FOR PASSENGER CARS

Hudson Shows Dealers, Press New Light Car

Hudson will begin production of its long awaited light car in November and will present it to the public before the end of this year.

The company showed the new car to its sales organization and the press in Detroit the middle of September. Detailed specifications, however, still are secret as well as the name Hudson will give to the

totally new car. It can be said, however, that Hudson has done a good job of building a compact light car weighing about 2800 lbs. and with an engine rated at better than 100 hp. The horsepower to weight ratio will be about the same, or perhaps even a little better than the Hudson Hornet, indicating a ratio of something like 1-to-26.

The new engine is an in-line 6 with a 7.5 compression ratio

and uses regular grade gasoline. Wheelbase was not announced but visual calculation would place it somewhere between the shortest cars now being made and the Ford-Chevrolet-Plymouth range with which the car is to compete price-wise. Styling is completely new, with large glass areas and pleasing overall general appearance. It does not resemble any of the current Hudson lines but rather appears to have the best styling features of several other cars combined into one package.

The car is of monocoque construction and retains the step-down principle instituted by Hudson. Interior of the body is designed to accommodate six passengers. Hudson officials make a great point of the car's inherent stability despite its light weight. They say it has been tested at more than 100 miles per hour with no perceptible wander.

The car will be offered under several options to include standard and deluxe models, an aluminum cylinder head to give compression ratio of 8-to-1, a choice of standard transmission with or without overdrive, or Hydramatic transmission, and at least three different rear axle ratios.

You're the Doctor...
In Restoring an Engine's Original Smooth Performance

Make Thermostat Replacement with DOLE DV's

Part of Your Prescription!

Prescribe a new Dole replacement thermostat in every cooling system check-up. Do this consistently and take your profit—but also earn the thanks of your customers. Dole DV's—positive in their temperature control—are designed especially to handle the higher pressures of modern sealed cooling systems. They contribute to top performance and quicker warm up... save gas, oil and motor wear.

CONTROL WITH DOLE

THE DOLE VALVE COMPANY
1901-1941 Carroll Ave., Chicago 12, Illinois
Representatives in Principal Cities

This Coupon

MAKES IT EASY to get a TRICO SALES-MAKER CABINET



THOUSANDS of thousands of these handsome metal Trico Cabinets now are making money for dealers nearly everywhere.

To get yours, you need invest *only* in a modest, balanced stock of Trico's new Soft-Rubber Wiper Blades and Arms. Send us the coupon and we'll have your Jobber show you how you can own a Stock Organizer Cabinet D-102, *without extra charge*.

The new blades fit **ALL FOUR** types of wiper arms *without* adaptors. *No more fumbling on the 'shield!* The Cabinet puts the right blade or arm at your finger tips. *No more fumbling on the shelf.*

Mail the coupon to Trico *today!* The big blade season is just ahead. No obligation.



TRICO PRODUCTS CORPORATION, Buffalo 3, N.Y.

Please have a Trico Jobber show me the new Trico metal Cabinet D-102 and submit the cost of a stock of blades and arms especially selected to fit my needs.

Firm Name _____

Individual _____

Street Address _____

Town or City _____

(My Jobber is: _____)



Windshield Wipers

Trico Products Corporation, Buffalo 3, N.Y.

will need different mountings than my four cylinder transmission has. Could you tell me what year Ford mounting I should get? I have a 1941 transmission and also a '41 bracket that it sits on. Can I use a 1941 steering column?

Preston Markle
Hanover, Pa.

THIS engine can be installed by using a 1934 Ford cross member. It will have to be welded into position. It will also be necessary to install a V-8 radiator rather than Model B as your B radiator does not have enough water capacity. Also the V-8 exhaust system will have to be used.

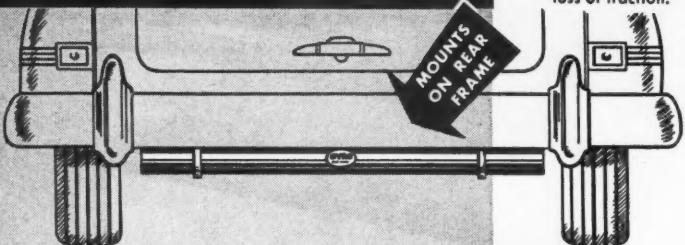
To install a column shaft it will be necessary for you to obtain a complete steering column. A 1940 Ford will fit and I believe your '41 will work also. Usually, no bending of the shifting rods is required but in some cases you will have to bend the actuating rods so that they clear the fire wall. Or you might even have to cut a bit of the fire wall away or bend it a little. You can reduce the length of the steering column by cutting it down.

~~\$300,000.00~~
~~\$200,000.00~~
worth sold last month...

*did you sell
your share?*

GYRO

SKID-CONTROL
(T.M. REG. PAT. PEND.)



GYRO SKID-CONTROL is the incredible all-weather safety device that harnesses the forces of inertia and momentum to control skidding, correct uneven traction, eliminate chatter and vibration.

GYRO SKID-CONTROL is instant-acting, automatic; it operates effectively on any car, on any highway surface, at any speed.

JOBBERS: Phone or wire your order today. **\$39.95** LIST

GYRO SKID-CONTROL COMPANY, INC.
9238 WEST OLYMPIC BLVD., BEVERLY HILLS, CALIFORNIA

GYRO SKID-CONTROL exerts instant counter-thrust to stop skids.



GYRO SKID-CONTROL dampens vibrations, chatter and rattle.



GYRO SKID-CONTROL automatically acts to compensate for loss of traction.



TESTED — PROVEN — ENDORSED by safety experts, engineers, fleet operators, race drivers, and private owners.

NOTICE! Gyro Skid-Controls are made and sold only by Gyro Skid-Control, Company, Inc. Unauthorized use of the name, sale or manufacture is prohibited.

Increased Compression On 1947 V-8 Olds

How much may I plane off the head of my 1947 Oldsmobile 8, without injury to the motor?

How much would be maximum and how much hp would I gain? Would it be wise to use dual carburetors and manifolds after the head is planed down so there is no damage to the motor?

Who makes high ratio rear end gears for this model Oldsmobile? I would appreciate any help or advice you may offer.

E. C. Boswell
Akron, Ohio

YOU can safely plane .060 inch from the cylinder head and perhaps more. But to be sure, it is a good idea to put some soft putty in the combustion chamber and then crank the engine. In this way, you can be sure the valve heads have clearance. A gain of about two horsepower would result from the increased compression. Dual carburetors and manifolds would definitely improve the engine performance.

I doubt very much whether anyone makes a higher gear ratio for this model.

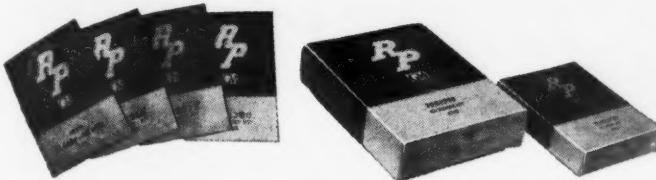


Designed...Tested...Proved!

ROCHESTER CARBURETORS

**WIN TOP PERFORMANCE HONORS
WITH LEADING CAR ENGINEERS**

Rochester Carburetors are designed, tested and proved by Rochester and General Motors engineers at General Motors proving grounds! That's one good reason why Rochester carburetors give top performance. Tests were conducted right on the new cars themselves—the only way to insure economy and performance. Built by Rochester, these proved designs are manufactured to General Motors standards.



WHEN SERVICE IS NECESSARY ALWAYS USE ROCHESTER ORIGINAL EQUIPMENT PARTS

Be in position to serve the carburetor needs of the ever-increasing number of Rochester equipped cars in your neighborhood—always use Rochester original equipment service parts for complete customer satisfaction. Rochester service parts are available as individual parts or in popular repair and gasket kits.

ROCHESTER PRODUCTS
DIVISION OF GENERAL MOTORS,
ROCHESTER, NEW YORK



**OPERATION AND
MAINTENANCE MANUAL**
Complete treatise on carburetion and carburetor service, profusely illustrated. Available to servicemen, technicians and students. Price \$1.50.



ROCHESTER CARBURETORS

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

"Our

SUNNEN[®] WET HONING MACHINE



...the best and fastest way
to fit pins...a fine job...
recommend Sunnen to
all our customers."

Reeves Russell, Partner
Burton Auto Supply
Weslaco, Texas

BURTON AUTO SUPPLY

Wholesale Distributors
REPLACEMENT PARTS AUTOMOTIVE EQUIPMENT
TOOLS AND SUPPLIES
Complete Automotive Machine Shop Service
3rd and Kansas St. Phones 102 and 579
WESLACO, TEXAS

RAYMONDVILLE, TEXAS
7th and Main Hwy
Phone 173

October 15, 1951

Sunnen Products Company
7910 Manchester
St. Louis 17, Missouri

Gentlemen:

We want you to know what a fine job our Sunnen Wet Honing Machine
is doing for us.

For our money, this machine is the best and fastest way to fit
pins. We do an average of about 100 pin jobs a month -- plus a
lot of other jobs such as king pins and hydraulic brake cylinders.
We haven't run across any pins that we couldn't fit. Our Sunnen
Honing Machine has really paid its way.

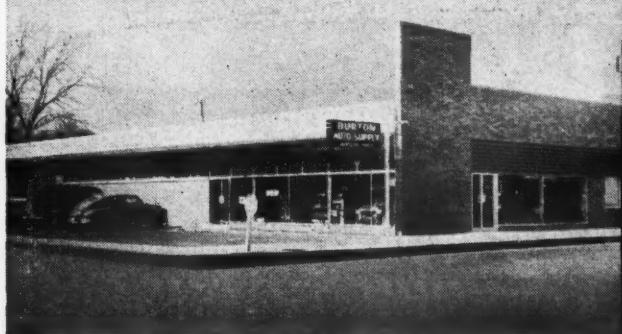
We know from first hand experience that the Sunnen Wet Honing
Machine is tops for all kinds of pin fitting. That's why we
don't hesitate to recommend Sunnen to all our customers for their
own shops. We know it'll make money for them, too.

Respectfully,

BURTON AUTO SUPPLY

Reeves Russell
Reeves Russell,
Partner & Manager

"We Service the Equipment We Sell"

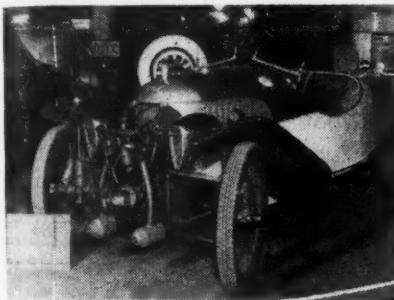


PRODUCTS CO.
7910 Manchester Ave., St. Louis 17, Mo.
Canadian Factory: Chatham, Ontario

649

The International Motor Show

The car shown below was rated "the most unusual" to be displayed at the International Motor Show at the Arena in Philadelphia on Sep-



The Morgan "Three Wheeler," restored by Wm. A. Johnson.

tember 8th through 13th. William A. Johnson's "Morgan Three Wheeler" is a British product of 1921 vintage. It was shown in the Antique Sportscar Division. The event included an array of over 60 automobiles, of both the present and past, such as sportscar, antiques, custom cars, classics, hot rods and racers. This was Philadelphia's first annual Sports Car Revue.

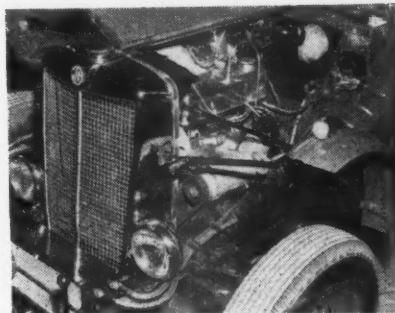
Another interesting car was a custom job, built by William Heermance of Swensenville, Pa. It has been voted one of the ten outstanding custom cars in the country. Mr. Heermance started out with a Studebaker engine. With the exception of a Mercury windshield and two Mercury front fenders, the rest of the car was built from scratch.

One car which drew a lot of attention from the audience was the new Mercedes "300," the first one to be exhibited in this country. The car is the production

model based on the famous "300 SL" Mercedes which came in first and second at Le Mans this year. The sedan model sells for \$6,000.

Among the competitive cars displayed was a Mark II MG that has been stripped for competition. It has a supercharger, and magneto ignition.

Lt. "Rocky" Drebber, of the South Jersey Sportscar Club, has lightened this job wherever possible. It has cycle fenders, and the top has been taken off completely. To make room for the supercharger, the battery has been placed in the luggage space behind the seats.



Competition MG. Notice the oil cooler in front of the radiator.

Turn-out for the show was excellent, an indication of the steadily increasing interest in sportscars. According to Dick Strome, director of the show, a number of sportscar clubs and foreign dealers participated. Among other interesting cars were a Czechoslovakian Skoda from behind the Iron Curtain, a French BNC racer, three beautifully restored Mercers, belonging to members of the Antique Automobile Club of America and a 1930 Alfa-Romeo.

The Heermance custom car, voted one of the country's 10 best.



Chilton's MOTOR AGE, OCTOBER, 1952



Burton Auto Supply like thousands of other users . . . has discovered that Sunnen Wet Honing delivers the kind of on-the-job performance they need.

Sunnen owners quickly learn how many different kinds of jobs a Sunnen Wet Honing Machine can handle. Piston pin bushings, con-rod bushings, spindles, hydraulic brake cylinders, transmission housings . . . you can do these and many other jobs right in your own shop.

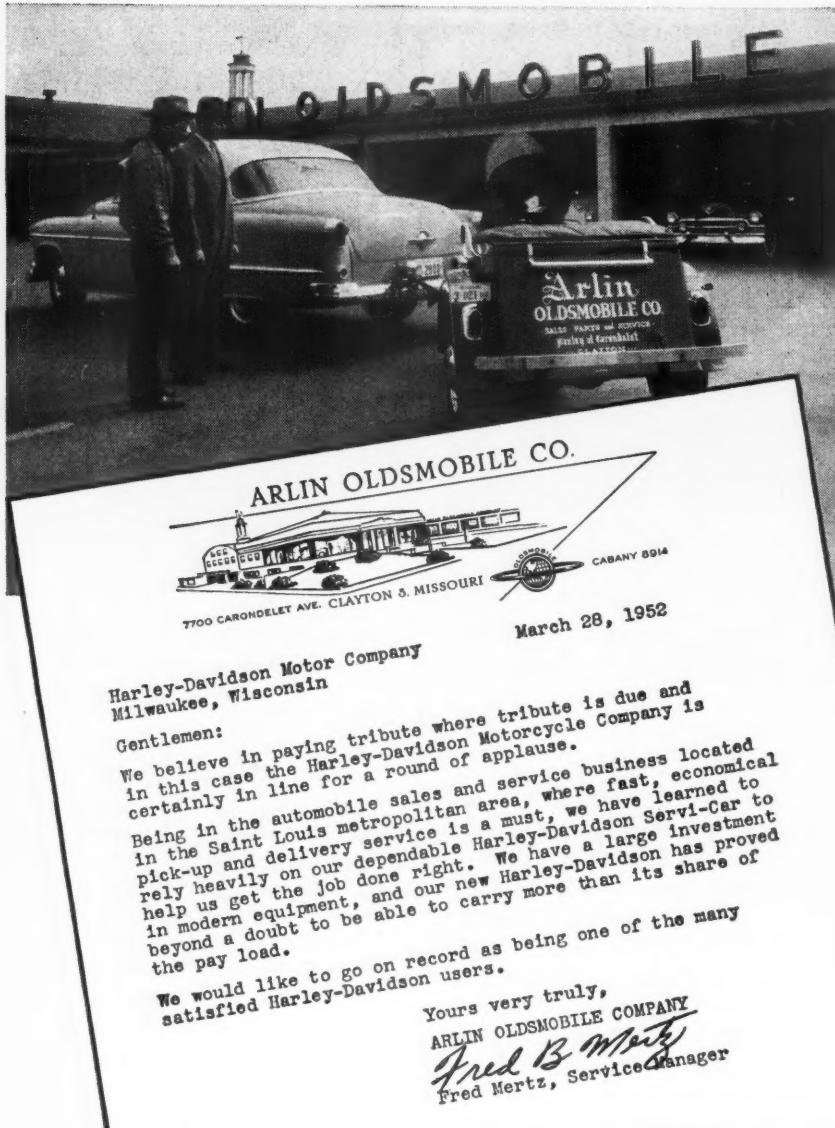
Your Sunnen jobber will be glad to show you how you can expand your service setup so that you can handle bushings and small cylinder jobs from .480" to 2.625"—with the speed and accuracy that builds customer satisfaction and greater profits for you.

Call your Sunnen jobber NOW...ask him to arrange a demonstration.

SUNNEN PRODUCTS CO.
6142 Manchester Ave., St. Louis 17, Mo.
Canadian Factory: Cheltenham, Ontario

**"We have learned to rely heavily on our dependable
HARLEY-DAVIDSON Servi-Car
to help us get the job done right"**

says Fred B. Mertz, Service Manager
Arlin Oldsmobile Co., Clayton, Mo.



Thousands of car dealers are Servi-Car boosters. They'll tell you it is indispensable for rendering profitable, modern service. Today, more than ever, you need this time-saving money-maker and good-will builder.



HARLEY-DAVIDSON MOTOR CO., Dept. MA, Milwaukee 1, Wisconsin

SERVI-CAR
SERVICE SELLS MORE SERVICE

**Audit to Tell Fate
Of Crosley Motors**

The fate of Crosley Motors, Inc., still is in doubt but should be known soon when an audit of the company's books is completed. The audit was ordered after General Tire and Rubber Co. bought control from Powell Crosley, Jr., founder and president. It is thought likely that rights to the Crosley car will be sold by General Tire if a buyer can be found, with General retaining production of the Crosley engine for marine and diesel use.

**Somerville Made Plymouth
V.P. and Board Member**

R. C. Somerville has been elected a vice president and a member of the Board of Directors of Plymouth Motors Corp. He will continue as general sales manager of Plymouth, a position he has held since June of 1947. He has been associated with Plymouth since 1931.

**New Cars Sell Below
1940 Retail Prices!**

At current prices automobiles are a bargain! In 1940 a factory worker had to spend thirty-one weeks' wages to purchase a new car. A comparable car today would cost him twenty-eight weeks' wages or, to carry the comparison further, in 1940 it would have taken 1,141 bushels of wheat to purchase a car which today could be bought with 827 bushels of wheat; in 1940, 144 crates of eggs and today 89 crates of eggs would suffice; in 1940, 16 bales of cotton, today 9 bales of cotton. What's that about high prices?

ECHLIN

Ignition

CONTACTS
COILS • CONDENSERS
& OTHER AUTOMOTIVE
ELECTRICAL PARTS

ECHLIN MANUFACTURING COMPANY
DEPT. MA 1, 220 EAST STREET • NEW HAVEN 5, CONN.

2 great aids to BIGGER CARTRIDGE PROFITS



FRAM SLUDGE SYPHON

Provides quick, easy way to clean filter bodies. One operation instantly removes all sludge. Only 50c with an order of 48 or more Fram Cartridges.

FRAM
OIL • AIR • FUEL • WATER
FILTERS



FRAM CARTRIDGE DISPENSER

Handsome metal merchandiser keeps Fram Cartridges handy and in plain view. Easily fastened to wall of lube or display room. Holds 12 Fram C-4 Cartridges or assortment of other sizes. Only 40c with D-750 Cartridge Assortment (24 C-4 size cartridges).

CALL YOUR FRAM DISTRIBUTOR OR MAIL THIS COUPON

FRAM CORPORATION, Providence 16, R. I.

Gentlemen: I am interested in the Fram Cartridge Dispenser and/or the Fram Sludge Syphon. Please have my Fram Distributor call on me.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

DISTRIBUTOR'S NAME _____

CALENDAR OF COMING EVENTS

Dealer Meetings

Oct. 9-11—Pennsylvania Automotive Assn., Chalfonte-Haddon Hall, Atlantic City, N. J.

Oct. 12-14—Arizona Automobile Dealers Assn., Pioneer Hotel, Tucson

Oct. 16-18—National Used Car Dealers Assn., Hotel Hollenden, Cleveland

Oct. 19-21—Florida Automobile

Dealers Assn., Sans Souci Hotel, Miami, Fla.

Oct. 26-28—Tennessee Automotive Assn., Noll Hotel, Nashville

Oct. 26-28—Automobile Dealers of Alabama, Buena Vista Hotel, Biloxi, Miss.

Oct. 27-29—Automotive Trade Assn., of Virginia, John Marshall Hotel, Richmond

Nov. 16-17—Texas Used Car Deal-

ers Assn., Buccaneer Hotel, Galveston
Nov. 19-20—Oklahoma Automobile Dealers Assn., Skirvin Hotel, Oklahoma City

Dec. 1-2—Idaho Automobile Dealers Assn., Boise

Dec. 3—Oregon Automobile Dealers Assn., Columbia Athletic Club, Portland

Dec. 4—Utah Automobile Dealers Assn., Newhouse Hotel, Salt Lake City

Dec. 8-10—Ohio Automobile Dealers Assn., Statler Hotel, Cleveland 1953

Feb. 14-18—National Automobile Dealers Assn., San Francisco

Feb. 28-Mar. 7—Johnstown Automobile Dealers Assn., Cambria County War Memorial, Johnstown, Pa.

Care Will Save Your Car Trade Meetings

Oct. 21—Municipal Auditorium, New Orleans, sponsored by Automotive Wholesalers of New Orleans

Automobile Shows

Oct. 10-18—International Auto Show, Oakland Exposition Bldg., Oakland, Calif.

Oct. 22-Nov. 1—International Motor Exposition, Earls Court, London, England 1953

Jan. 24-31—Grand Rapids Automobile Show, Civic Auditorium, Grand Rapids, Michigan

Mar. 14-22—Chicago Automobile Show, International Amphitheatre, Chicago

Industry Meetings

Oct. 10-12—Automotive Wholesalers of Texas, fall meeting and convention, Driscoll Hotel, Corpus Christie, Texas

Oct. 13-14—Middle Atlantic Automotive Wholesalers, fall convention, Chalfonte-Haddon Hall, Atlantic City, N. J.

Dec. 4-6—Distributors Institute meetings, Ritz-Carlton Hotel, Atlantic City, N. J.

(Continued on page 158)



Quality G-H "SAFETY PARTS"
Time Tested... Road Proven



FRONT END SUSPENSION PARTS—
TIE ROD ENDS — KING BOLT SETS
COIL SPRINGS

MR. P. E. WEBER

The real test—the only test that proves the quality of any automotive part is that made by motorists themselves under all driving conditions. G-H "Safety Parts" have passed with "flying colors" year after year of constant use by satisfied customers throughout the country. G-H Parts wear longer, because they are made of the finest materials to exact specifications to assure a perfect fit every time.

Mr. P. E. Weber, president of P. E. Weber, Inc., Milwaukee, Wisc., a G-H Warehouse Distributor, writes:

"We know, as do our jobbers and dealers, that installing G-H "Safety Parts" means guaranteed customer satisfaction and more repeat business."

Higher profits and more repeat business can be yours, too, when you buy and install G-H Parts. Prove it for yourself. Ask the G-H man or write,



HERSHEY METAL PRODUCTS, INC.
DERBY, CONNECTICUT



ANNOUNCING

THE NEW **ALLEN**

Dynacharger

BATTERY CHARGERS

FAST-SLOW CHARGER

DE LUXE PORTABLE MODEL F-28
— 6 Volts, 75 Amps. — 12 Volts, 40
Amps.

DE LUXE PORTABLE MODEL F-77
6 Volts, 75 Amps.

Has many big charger features, includ-
ing automatic electric timer.



FAST-SLOW CHARGER

STANDARD PORTABLE MODEL
F-52 6 Volts, 75 Amps.

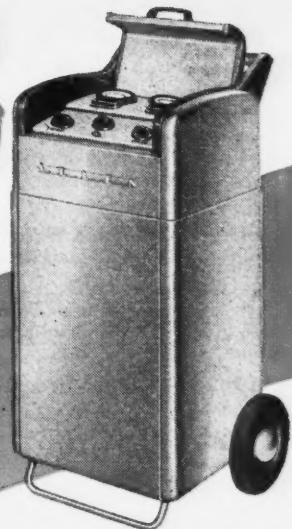
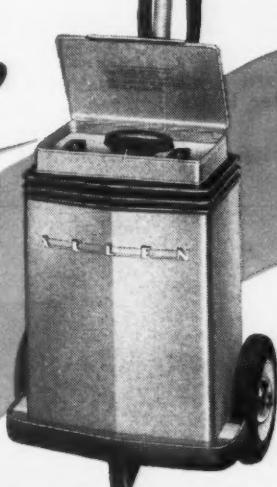
A high quality charger priced within
the reach of every shop.



FAST-SLOW CHARGER

STANDARD MODEL F-210 —
6 Volts, 100 Amps.

The finest moderate priced, wheel-
mounted charger made. Includes 5-
Second Battery Test.



FAST-SLOW CHARGER

DE LUXE MODEL F-260* —
6 Volts, 100 Amps. — 12 Volts,
50 Amps.

DE LUXE MODEL F-250* —
6 Volts Only — 100 Amps.

**With Sensational
New "Dyna-Meter"
Battery Analyzer!*

ARE YOU PREPARED FOR THE 12 VOLT MARKET?

Several 1953 model cars will have 12-Volt sys-
tems! 12-Volt charging will be a "must" — be
prepared with an Allen 6 and 12 volt charger.

Allen DYNA-CHARGERS will help you make battery servicing a more im-
portant and more profitable department of your business. Some of the out-
standing features of DYNA-CHARGERS are: New Chip-Proof Finish —
Rugged Construction — Easy Operation — Dependable Meters — Automatic
Synchronous Electric Timers — Full Wave, Low Power Consumption Selenium
Rectifiers — Heavy Duty Transformers — Thermal Overload Circuit Breaker
Burn-Out Protection.

EASY PAYMENTS...
TRADE-IN ALLOWANCE

Most Allen distributors will be glad to arrange for Easy
Payments and a Trade-In Allowance on your old charger.



ALLEN ELECTRIC AND EQUIPMENT CO.

KALAMAZOO, MICHIGAN



GET ALL THE DETAILS OF THIS GREAT NEW LINE
OF CHARGERS, MAIL COUPON TODAY!

ALLEN ELECTRIC & EQUIPMENT CO.

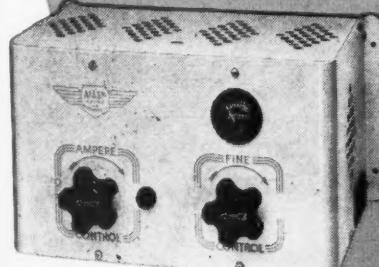
1810 N. Pitcher St., Kalamazoo, Mich.

Please send me the free illustrated folder
giving complete information on the new
DYNA-CHARGER Battery Chargers.

Name. _____

Address. _____

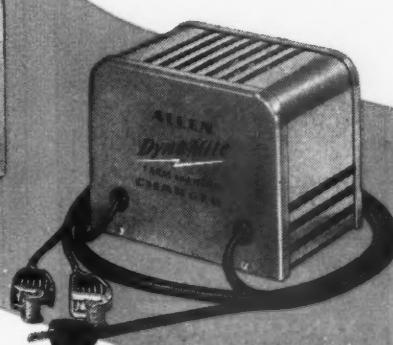
City. _____ State. _____



SLOW CHARGER

UNITRON MODEL E-15 —
Charges up to twelve 6-volt,
or six 12-volt batteries at 6
amperes.

A "must" for complete battery
servicing.



FARM AND HOME CHARGER

MODEL F-66 — 6 Volts, 4 Amps.
You can sell many of these over-
night chargers to car, truck and
tractor owners.

Calendar Continued from Page 156

Dec. 6-9—Automotive Affiliated Representatives meetings, Dennis Hotel, Atlantic City, N. J.

Dec. 7-9—Motor & Equipment Assn., Chalfonte-Haddon Hall Hotel, Atlantic City, N. J.

Dec. 8-9—National Standard Parts Assn., convention, Ambassador Hotel, Atlantic City, N. J.

Dec. 8-9—Automotive Booster Club

International convention - executive council and board of governors meetings, Traymore Hotel, Atlantic City, N. J.

Dec. 9—Manufacturers open meeting and MEMA members informal reception and dinner, Traymore Hotel, Atlantic City, N. J.

Dec. 10—Automotive Booster Club International Banquet, Traymore Hotel, Atlantic City, N. J.

Dec. 10-13—Automotive Service Industries Show, Atlantic City, N. J.

Dec. 11—Overseas Automotive Club reception and banquet, Traymore Hotel, Atlantic City, N. J.

1953

Feb. 26-Mar. 1—Pacific Automotive Show, Civic Auditorium, San Francisco, Cal.

Mar. 9-10—Canadian Automotive Wholesalers & Manufacturers convention, King Edward Hotel, Toronto, Ont.

Mar. 11-14—Canadian Automotive Service Show, Exhibition Grounds, Toronto

Mar. 26-29—Southwest Automotive Show, Fair Park, Dallas, Texas

Apr. 21-24—Middle Atlantic Regional Automotive Show, Commercial Museum, Philadelphia

May 22-24—Southeast Automotive Show, Diner Key Exposition Bldg., Miami

June 18-21—Upper Midwest Automotive Trade Show, Municipal Auditorium, Minneapolis

Other Meetings

Oct. 20-24—National Safety Council, national exposition, Conrad Hilton Hotel, Chicago

Oct. 22-24—Society of Automotive Engineers, national transportation meeting, Hotel William Penn, Pittsburgh

Nov. 3-4—Society of Automotive Engineers, Chase Hotel, St. Louis

Nov. 6-7—Society of Automotive Engineers, Mayo Hotel, Tulsa, Oklahoma

Nov. 6-7—American Finance Conference, annual convention, Palmer Hotel, Chicago

Nov. 30-Dec. 5—Society of Automotive Engineers, Statler Hotel, New York City

1953

Feb. 2-5—Automotive Accessory Mfg. of America Exposition, Grand Central Palace, New York City



for a tight grip!

Herbrand's 6 POINT ULTRA BOX WRENCH SET No. 4620

Increasing service work on modern motors has created a definite need for box wrenches with 6-point openings. Such wrenches take a full grip on all 6 sides of hex nuts or bolts, even when badly chewed up. This Herbrand Wrench Set No. 4620 includes three wrenches with the 6 most popular openings. Their thin side walls permit use in cramped quarters. Heads are offset to reach countersunk or imbedded nuts. Wrenches are drop forged from triple alloy steel and heat-treated for extra toughness. Handsome chrome finish, mirror polished heads, and distinctive paneled handles identify these tools as the finest quality in the wrench field.

Set No. 4620-B contains 3 wrenches with openings $\frac{3}{8}$ ", $\frac{5}{16}$ ", $\frac{1}{2}$ ", $\frac{7}{16}$ ", $\frac{1}{4}$ ", $\frac{13}{16}$ " in respective lengths of $4\frac{1}{2}$ ", $5\frac{1}{4}$ ", and 6" packed in sturdy box. Mechanic's Net \$3.63.

MECHANIC'S NET PER EACH

No. 4623-\$1.15... No. 4625-\$1.19... No. 4627-\$1.29



Set No. 4620 is Herbrand's Tool-of-the-Month Selection for November. See it at your Herbrand distributor or write us.

Herbrand Tools

Fremont 7, Ohio

THE BINGHAM-HERBRAND CORPORATION



"Yes sir, folks, and notice this sturdy frame while we're here!"

INDEPENDENT SERVICEMEN...

Here are *4 ways it pays*

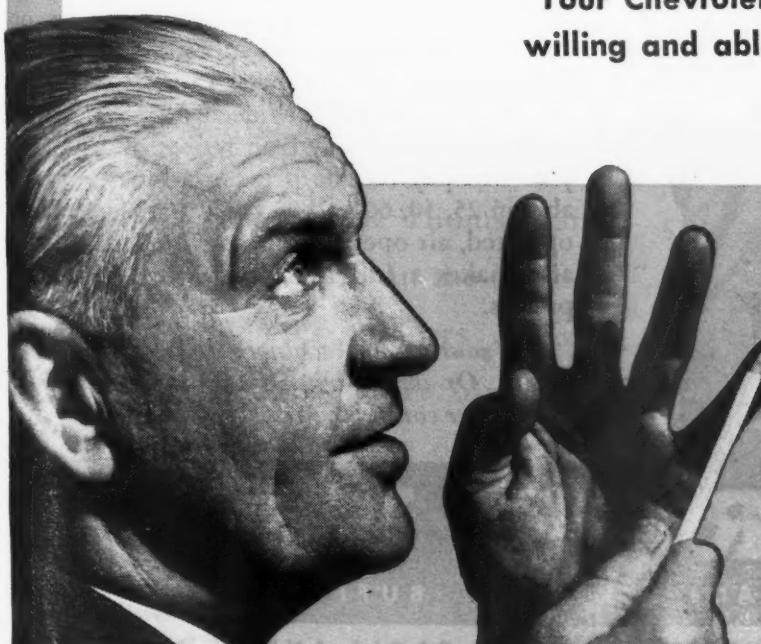
to deal with your Chevrolet dealer...
your partner in service!



- 1 A well balanced stock of genuine Chevrolet precision-built parts, that
- 2 Help raise your service efficiency, and
- 3 Help increase your customer satisfaction; plus
- 4 Expert help in solving your service problems

Your Chevrolet dealer is ready,
willing and able to give you all

4



KRW HYDRAULIC PRESS

AUTOCAR SALES & SERVICE CO.

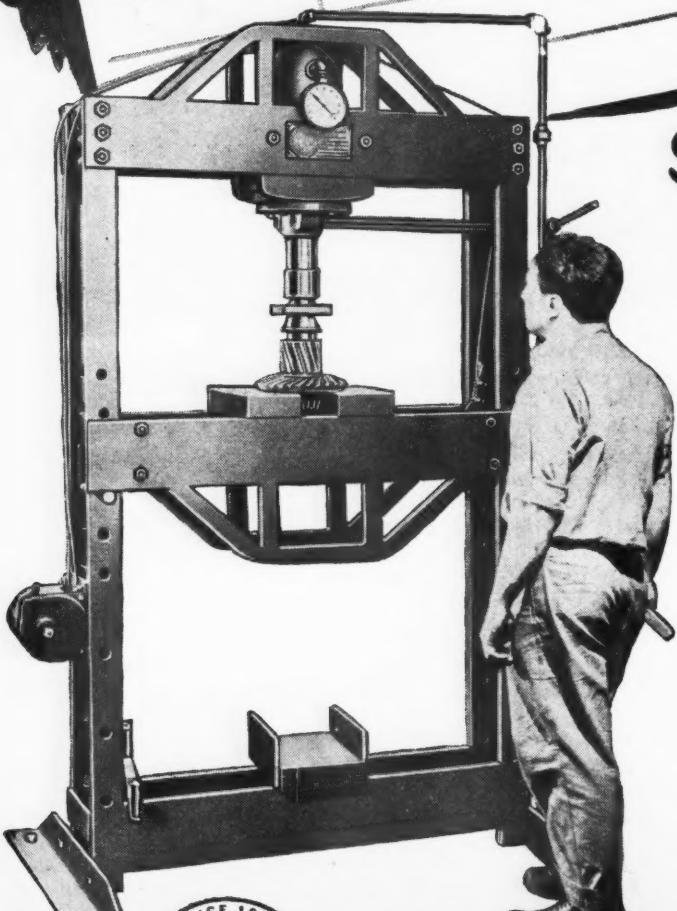
JOB CARD

WORK PERFORMED

DATE

Every
Day

- ✓ Straightened bumpers
- ✓ Pressed on rear axle shafts
- ✓ Set rivets cold (with adapter)
- ✓ Removed & replaced crankshaft gears
- ✓ Assembled water pumps
- ✓ Removed & replaced camshaft gears



SOME SERVICE RECORD!

Ask any automotive service shop with a KRW Hydraulic press if it was a worthwhile investment. Autocar, for one, will answer with a rousing "Yes!" In addition to the jobs listed above, Autocar Sales & Service of Buffalo, N. Y. does generator and starter overhauls, installs bushings on shock absorber arms, removes and replaces pinion bearings and forms fifth wheel hold-down straps on their 75 ton hand operated KRW Hydraulic press. Install a KRW press in your shop and you'll soon find your mechanics lining up to use it. Time saved on scores of different jobs will pay for the press in a hurry. Available in 25, 50, 60 and 75 ton capacities. Hand operated, air operated or motor driven. KRW also makes a full line of Bench type Arbor presses.

Ask your local Machinery dealer to quote you. Or write, wire or phone Dept. 87 for complete details and prices.



K · R · W I L S O N

215 MAIN STREET • BUFFALO 2, N. Y.

WORLD'S LARGEST MANUFACTURER OF GARAGE TOOLS AND EQUIPMENT

THOMSON

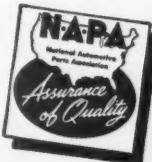
the most
complete
line in the
business!



- The *right* part for every car or truck—that's old stuff in some parts lines. But it's *news* in thermostats . . . and Thomson has it! The Thomson line is the most complete in the business . . . 65 first-quality numbers . . . coverage of practically every car, truck, tractor, bus and engine on the road today. If you're going to sell thermo-

stats, doesn't it make sense that you should sell the one line that covers them all . . . THOMSON!

STANDARD-THOMSON CORPORATION
DAYTON 2, OHIO



Used as original
equipment by major
car manufacturers

Thomson
Thermostats



For profit...
sell the best lining
to make the best

BRAKES

You satisfy, hold, *and profit from*, your customers, only when you sell them something that does it better. And in brake service that's the *lining*!

Sell INLITE, a General Motors Product, tested at the Proving Grounds.

A small stock of INLITE will let you service almost *all* cars . . . with specially compounded segments for *each* brake on *each* car. One quality . . . top quality.

INLAND MANUFACTURING DIVISION • General Motors Corporation, Dayton, Ohio

INLITE BRAKE LININGS

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE



IT'S EASY TO GET STARTED WITH MORAINE ENGINE BEARINGS

... The Bearings with a Pre-Sold

**Multi-Million Car
Market!**



**IT'S EASY TO GET STARTED
WITH ANY OF THESE
UNITED MOTORS LINES**

DELCO Batteries
AC Gauges, Speedometers
and Rebuilt Fuel Pumps
SAGINAW Jacks
MORAINE Engine Bearings
DELCO Radio Parts
ROCHESTER Cigar Lighters
HYATT Roller Bearings
INLITE Brake Lining
HARRISON Heaters
GUIDE Lamps
DELCO Clocks
NEW DEPARTURE Ball Bearings
DELCO Shock Absorbers
DELCO-REMY Starting, Lighting &
Ignition
MORAINE Gasoline Filters
HARRISON Thermostats
KLAXON Horns
HARRISON Radiators
ROCHESTER Carburetors
DELCO Hydraulic Brakes

It's easy to get started with Moraine engine bearings . . . easy to get a good volume right from the start. Moraine is the original equipment line . . . the replacement line made to original equipment specifications.

LOOK AT THE MARKET!

Moraine engine bearings for replacement offer 1952 bearing performance to over 40 million cars and trucks—*three out of every four cars and trucks that pass your door!*

THE MODERN BEARING—DUREX-100!

Moraine makes Durex-100—a superior bearing—both for original equipment and for replacement. Steel-backed middle layer (or matrix) of porous copper-nickel is bonded mechanically and metallurgically with the babbitt overlay to give Durex-100 increased embedability and greater resistance to fatigue. Durex-100 is the modern bearing.

GET STARTED NOW!

It's easy to get started with Moraine . . . right now! Contact your nearby United Motors bearing distributor. He can tell you in a few minutes why Moraine engine bearings are profitable for you to handle.

MORAINE ENGINE BEARINGS

A GENERAL MOTORS PRODUCT

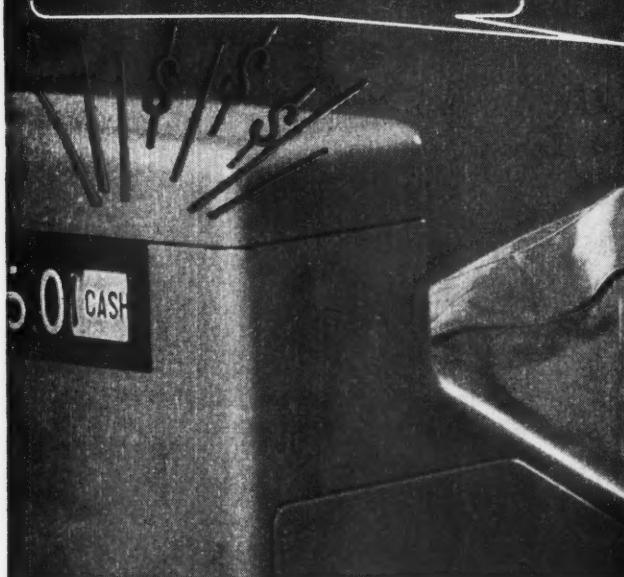


A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE



Here's how I made my 'forgotten service' pay off!



"Air service is a *must* with all of us, but I decided to make 'free' air pay its way. I put the easy-to-follow Schrader Certified Air Service Plan to work. That means I use this Schrader gauge the same way I do the oil dip-stick, and apply the sensible, industry-approved heat build-up formula to show my customers how my service really helps them. That all adds up to customer interest. And customer interest turns 'once-in-a-whiles' into 'steadies' . . . and rings up sales!"

That's typical of what more and more dealers are telling us about the results they're getting with Schrader Certified Air Service. You, too, can make more sales . . . when you put Certified Air Service in operation. Certify your air service with genuine Schrader products. Ask your Schrader supplier for them now.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
470 Vanderbilt Ave., Brooklyn 17, N. Y.

Schrader Products
sell your dealer top quality
every time!



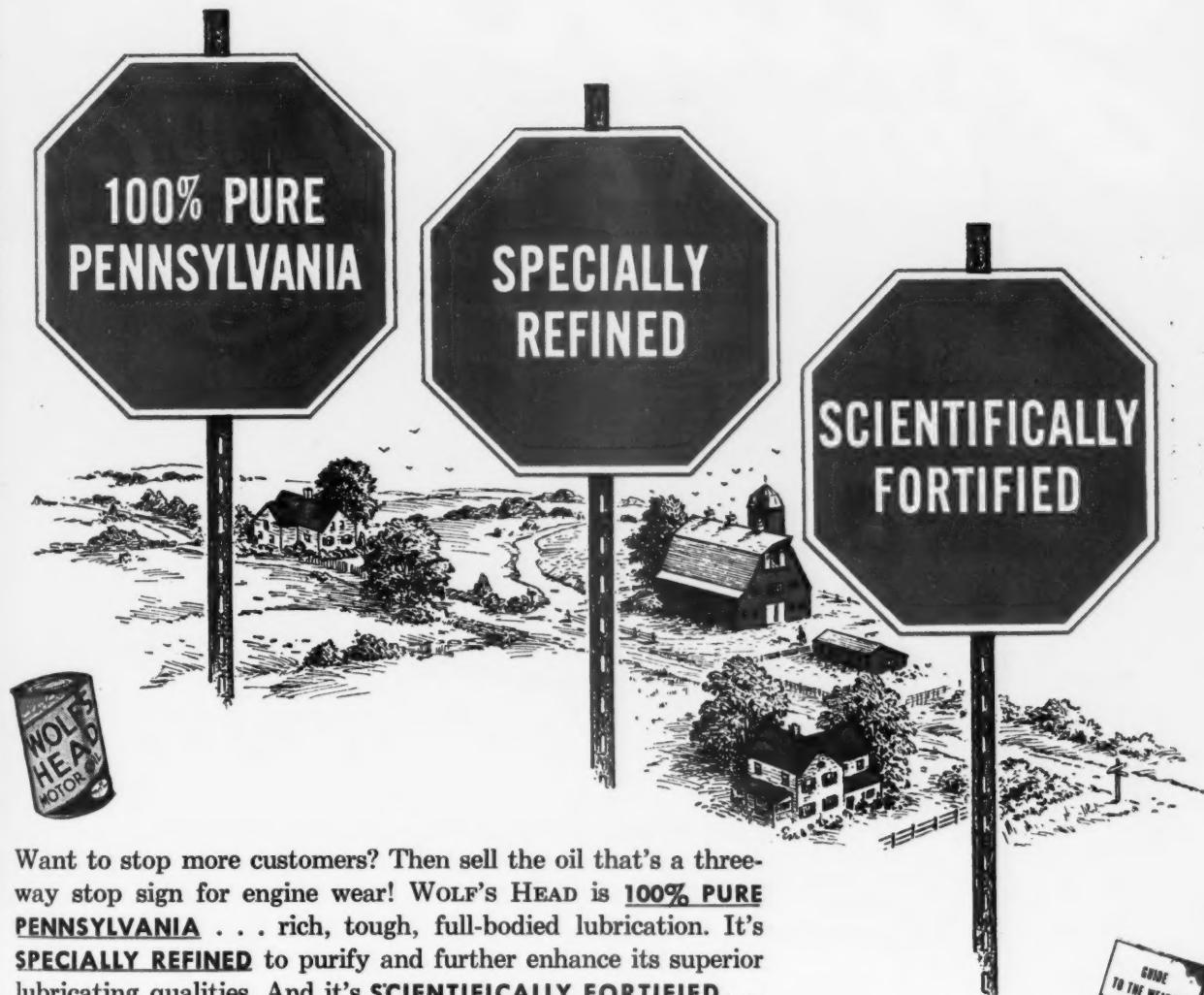
Schrader

REG. U. S. PAT. OFF.

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

The New WOLF'S HEAD MOTOR OIL



Want to stop more customers? Then sell the oil that's a three-way stop sign for engine wear! WOLF'S HEAD is **100% PURE PENNSYLVANIA** . . . rich, tough, full-bodied lubrication. It's **SPECIALY REFINED** to purify and further enhance its superior lubricating qualities. And it's **SCIENTIFICALLY FORTIFIED** . . . cleans as it lubricates . . . provides extra protection against corrosive acids, rusting and oxidation.

When heavy duty oil is required, recommend and sell WOLF'S HEAD Heavy Duty . . . it exceeds car manufacturers' specifications.

You'll be ahead with WOLF'S HEAD . . . the name that means "the finest of the fine" to millions of motorists everywhere.

FREE!

"Guide to the Weather." Folder shows how to forecast weather by cloud formations. Write for a copy. WOLF'S HEAD OIL REFINING CO., INC., OIL CITY, PA., NEW YORK 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania
Scientifically Fortified



Member, Penna. Grade
Crude Oil Association

Gatke

BRAKE LINING

For the man who wants the best



PATENTED GROOVES

Cleans—Eliminates GRIT and Foreign Matter. Keeps surfaces clean for reduced wear and uniform braking.

Cools—Circulates air against drum surfaces. Brakes keep cooler, stop smoother, wear longer.

Dries—Throws out water when brakes are wet—restores brake effectiveness.

ask your GATKE Jobber or write

GATKE CORPORATION, 236 N. La Salle St., Chicago 1, Ill.

Manufacturers of

ASBESTOS BRAKE LINING FOR EVERY PURPOSE . . .

MOULDED ASBESTOS FRICTIONS—ALL SHAPES AND SIZES . . .

MOULDED FABRIC BEARINGS SERVING ALL INDUSTRIES . . . ASBESTOS TEXTILES

When a manufacturer says:

ADVERTISED IN

Country Gentleman

WHAT DOES IT MEAN TO YOU?



SOLD!

Your Best Rural Customers. Advertising in Country Gentleman sells the better-income, bigger-buying rural families in your own trading area. It is the best-read magazine in 2,300,000 rural homes throughout America.



SOLD!

Customers Other Magazines Miss. Non-farm magazines fail to reach Country Gentleman readers . . . 2 out of 3 women do not read any leading women's magazine—4 out of 5 men do not read any leading weekly magazine.

Rural America's Best Salesman!

PROOF THAT ADS IN COUNTRY GENTLEMAN SELL GOODS FOR YOU

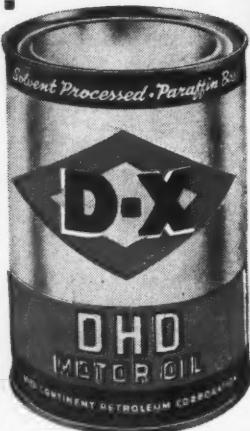
A nationwide survey shows that men and women heads of Country Gentleman homes

1. READ THE ADVERTISING in Country Gentleman in 96.2% of homes
2. GET BUYING IDEAS from the advertising in 3 out of 4 homes

The Family Magazine
for Better Farming—Better Living



Trouble with Hydraulic Valve Lifters?



D-X DHD MOTOR OIL

has an amazing record
of Quick, Low-Cost
Cures!

It's a fact! Improper oil, not mechanical difficulty, is often the real cause of trouble with hydraulic valve lifters. Time after time, a simple change to D-X DHD Motor Oil has restored smooth, efficient valve operation in a short time at very little cost!

DEALERS TELL US AMAZING STORIES

Registered dealers in models which use hydraulic valve lifters have told us almost unbelievable stories of results that D-X DHD Motor Oil has given. One dealer credits this great oil with stopping faulty hydraulic valve lifter operation in just 10 minutes!

TRY D-X DHD IN YOUR SHOP

The next time you are confronted with a case of hydraulic valve lifter trouble, change the motor oil to D-X DHD. If no mechanical damage has been done, D-X DHD will very likely solve the problem quickly. D-X DHD Motor Oil is sold by D-X distributors and jobbers throughout the Middle West. If you are located outside our marketing area, write direct to our home office in Tulsa, Oklahoma, for prices and terms.

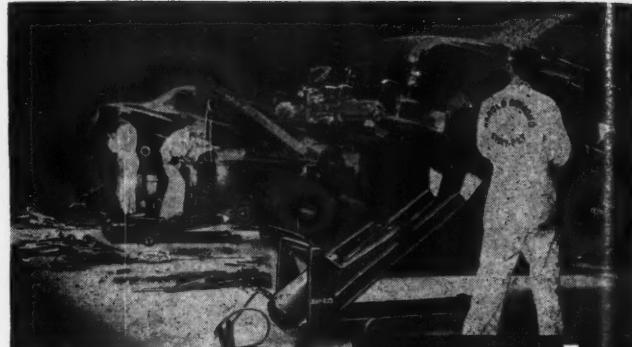


MID-CONTINENT PETROLEUM CORPORATION
Tulsa, Okla.

Waterloo, Ia.
Chicago, Ill.

Terre Haute, Ind.

Omaha, Nebr.
Minneapolis, Minn.



Bay-Lift Saves & Pays
in Many Ways



Mr. G.E. Moothart, Gen. Mgr. of Harold Raymond, Inc.,
Chrysler-Plymouth dealers of Compton, California
writes . . .

"We certainly are pleased with the six Bay-Lifts we recently installed in our body and fender departments. It is hard to see how we handled the volume through these departments without Bay-Lifts. They are the means of additional profits to our company and our men have expressed their appreciation for them. In our estimation Bay-Lifts are a **MUST** for efficiency in time-saving operation."

EASY TO USE AND SAFE

Moved easily as a jack. Used in or out-of-doors by simply attaching to air hose. Lifts either end of any car with safety. Load is supported by two sets of lifting arms, anchored at 4 points, which will raise maximum load to any height with steady action at correct angle, minimizing stress and strain. Equipped with automatic safety lock. Weight of suspended load, distributed equally to all parts of the bottom frame, eliminates possibility of tipping or falling "off balance".

SCIENTIFICALLY ENGINEERED
TO INSURE ABSOLUTE
SAFETY

Write Today For Information . . .



BAY MANUFACTURING COMPANY
BOX 578 — TORRANCE, CALIFORNIA
OVERSEAS DIVISION, 276 WEST 43RD ST., NEW YORK 36, N.Y.

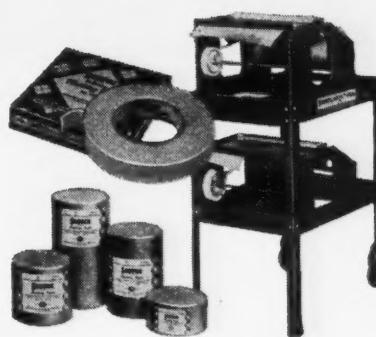


**Do better, faster work with
the complete line of
3M Refinishing Products**

"3M" ABRASIVES



"SCOTCH" MASKING PRODUCTS



"3M" ADHESIVES



another 3M Service success story

Every Month is D.O.O.F.* Month for this Texas Service Manager!

3M's *GET-THE-DENTS-OUT-OF-YOUR-FENDERS Month proved the value of active body shop promotion to the Sam White Oldsmobile Co. of Houston, Texas. And proved it conclusively with \$1,000 worth of extra refinishing business.

That's why Service Manager L. E. NEITSCH plans to use the D.O.O.F. idea *every month*.

Says Mr. Neitsch, "... the D.O.O.F. program has proven sound, workable and profitable. It was so successful that we intend to continue to use it every month of the year."

And 3M will help him by furnishing these three business-getting *year-around* promotions **FREE**. *Your shop* can use them, too!

LOOK THESE OVER!

1. **3M 3-WAY PLAN.** Shows how body shop promotion, water-leak service, and "UNDERSEAL" sales make extra profits for your auto-body shop.
2. **3M SYSTEM OF APPEARANCE RECONDITIONING.** Illustrates to your customers the latest and best refinishing methods. Proves expert refinishing repairs are "more than skin deep."
3. **3M WALL CHART PROGRAM.** Makes refinishing jobs easier to sell by picturing all the steps, skills and products required for perfect refinishing.

PLUS a continuing program of hard-hitting advertising and sales aids. Get them from your 3M Salesman, or write Dept. MA1052, Minnesota Mining & Mfg. Co., St. Paul 6, Minn.



Made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

HUDSON DEALERS

have a One-Two profit punch with a haymaker coming up!



The fabulous Hudson Hornet—It's America's glamour car, with a phenomenal stock-car race record. Almost a million people have cheered Hudson Hornets on to 38 victories in 45 starts, a record no other car can even approach. People everywhere are discovering that the car of proven stamina, safety and performance is the car they want in their garages.

The spectacular Hudson Wasp—Lower-priced running mate for the Hornet is a closing-room favorite with Hudson salesmen. This top performer, like all Hudsons, has more exclusive features to sell than any other car.

And here's the haymaker coming up!

Hudson's new, low-price wonder car—There's never been anything like it before! It's a sure-fire sensation, with thrilling pickup and velvet-smooth power. It brings fabulous Hudson Hornet performance, luxury and durability to the low-price field.

Possible only because of exclusive "step-down" design, this compact wonder car rides smoother, hugs the road tighter and is safer than anything except another Hudson.

It seats six comfortably and has the quality features

and conveniences of cars costing thousands more. If you want action and a profitable operation right now, look into a Hudson franchise *today!*

A few choice dealer franchises are still available. For full and confidential information on the Hudson franchise and advance details on the new, low-price wonder car, send in this coupon now!

C. A. J. Hadley, Sales Manager
Hudson Motor Car Company
Detroit 14, Michigan

Send me complete information on the Hudson dealer franchise and advance details on the new wonder car. I understand that all such information is to be confidential.

Name _____

Address _____

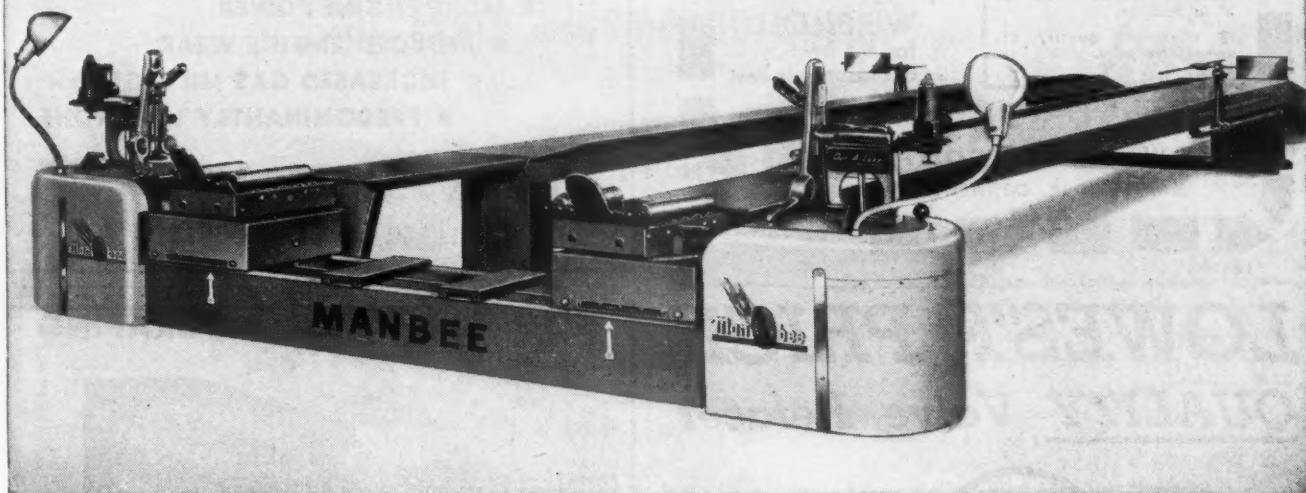
City & State _____

Business _____ Position _____

Revolve the Wheels—



Show the customer how his car runs on the road—right in your own shop!



The Dyn-A-Lyzer is *power operated*. The flick of a switch enables you to *measure alignment with the wheels in the true driving position, power driven under load*. No rolling—no shaking—no guesswork.

Using the simple spirit level gauges with greatly magnified scales you get *direct readings corrected for wheel runout plus exact measurement of wheel runout in degrees or inches*. Nothing is left to chance.

In just one operation with the scientific Tractoscopes you (1) *center steering position with precision*, (2) *set toe to hairline accuracy*, and (3) *check tracking*.

With the flick of a switch you can "road test" the car right on the Dyn-A-Lyzer.

With this 4-wheel alignment machine, you don't even need to square the car on the rack. You have no intricate mechanism that requires constant checking and adjusting. Operation is so simple and easy there is no reason for slighting a single check.

"Fastest, most accurate alignment machine", say users— "Twenty minutes average for complete check and correction with no comebacks."

A terrific Money Maker!

YES SIR! The Dyn-A-Lyzer does *MORE* than any other alignment machine—does it *FASTER*—does it more *ACCURATELY* and *MAKES YOU MORE MONEY*.

Let us show you *HOW*. Just mail the coupon.

MANBEE EQUIPMENT DIVISION
185-A5 North Wabash Ave., Chicago 1, Ill.

Send complete information about the Dyn-A-Lyzer®
 with drive-on rack, for pit installation,
 change-over for our present rack.

Name _____ Title _____

Company _____

Street _____

City _____ Zone _____ State _____

MAXIMUM EASE OF HANDLING

with

**WIREMOLD
DEFROSTER
HOSE**

THE BEST...
AT NO EXTRA COST

- Fits every make and model of car.
- Specified as original equipment on most makes of cars.
- Makes 90° - 180° bends with ease.
- Resists cold - heat - oil - water.
- Saves 50% storage space, 6' lengths retract to 3' in package.
- Wiremold quality at competitive price.

MAKERS OF WIREMOLD ELECTRICAL SYSTEMS

THE WIREMOLD COMPANY
HARTFORD 10, CONNECTICUT

14WMS1

**LOWEST PRICE
QUALITY Valve Refacer**



K. O. LEE COMPANY, ABERDEEN, SOUTH DAKOTA
WET VALVE REFACTERS • VALVE SEAT GRINDER SETS • STUD WRENCHES
VALVE SEAT INSERTS • RESEATER SETS • ELECTRIC DRILLS • SANDERS
ROD ALIGNERS • POLISHERS • HAND GRINDER SETS • REAMER DRIVES

QUICK VOLUME TURNOVERS

With

SPORTSMAN



**YOU CAN FILL OVER 87% OF NORMAL MUFFLER
DEMANDS WITH A MINIMUM STOCK
OF THE MUFFLER DESIGNED TO GIVE**

- FASTER PICK-UP
- LESS BACK PRESSURE
- MORE ENGINE POWER
- REDUCED ENGINE WEAR
- INCREASED GAS MILEAGE
- PREDOMINANTLY LOW TONE

Write for details today!

Arnold Haviland Company, Defiance 11, O.

NO MORE CARBON SCRAPING



Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like...

U. S. PAT. #2310042*
GUNK DUNK BENCH Carburetor and
Parts Cleaning Kit
New 6 1/2 gal., size deep "Vapor-
catcher" design pail.

**New-Improved-
More Potent***

GUNK HYDRO-SEAL

- 1. Faster . . . Terrific penetration . . . new improved odor.
- 2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . . without etching.
- 3. Lasts more than one year . . . due to water blanket.
- 4. Works hot or cold . . . Rinses wet or dry.
- 5. Patented Double Barrel Performance Guaranteed.

SOLD BY BETTER JOBBERS EVERYWHERE

*Write for Name of Nearest Stocking Jobber
Fatty Refuse Substitute Imitations*



MAGIC NAME TO
A MILLION OWNERS—

"ROCKET"!

And a Magic Selling Feature
for Every Oldsmobile Dealer!

SUPER



Above: Oldsmobile Super "88" Holiday Coupé

OLDSMOBILE

DIVISION OF GENERAL MOTORS CORPORATION • LANSING, MICH.

Why Clean Metal Parts the HARD WAY?



Use

**METAL
clene** →

**NO BRUSHING
NO SCRAPING
NO HEATING**

Metalclene is made under an exclusive Bendix formula. There are many copies, but there is no substitute. When you order, be sure to specify and get the original Bendix* Metalclene.

*REG. U.S. PAT. OFF.

Just Dip 'em in Dirty - Pull 'em out Clean

BENDIX PRODUCTS DIVISION of 
SOUTH BEND 20, INDIANA

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

STAINLESS STEEL BANDS

**RESIST
CORROSION**



"Aero-Seal"® HOSE CLAMPS

Aero-Seals stay bright, lock tight, grip right. Vibration won't shake 'em, or rugged treatment break 'em loose. Curved saddle prevents distortion or biting at clamping point. Grip never slacks, worm-drive screw never back-tracks, yet Aero-Seal won't bind - is easily removed. Screwdriver or thumbgrip types. Aero-Seal gives you more to sell - more profit from each sale. Contact your jobber, or write us direct.

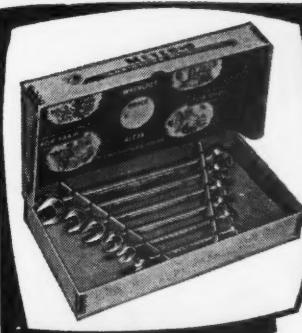


The Largest Selling Quality Hose Clamp in the World

BREEZE CORPORATIONS, INC.

41 S. Sixth St., Newark, N. J.

Use of stainless steel subject to government regulations.



METAL ENGINEERING
COMPANY
134 N. La Salle St.
CHICAGO 2, ILL.

LOOKING FOR
BIG VOLUME SALES
in RESALE TOOLS?

Ask your jobber
about the latest

METCOLD
HANDY SELF-DISPLAY
TOOL KITS

CHOLDUN
"AUTO-MAGIC"
CARWASHER

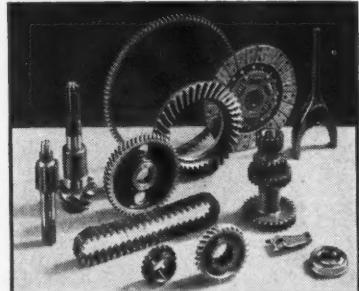
No Tracks to Lay,
No Arch to Sway,
No rack at All—
To Pull or Fall.
Won't Jump the Track
Or Break your Back.
No Tank to Fill,
No Soap to Spill,
No Valves to Stick—
Now—Take your Pick!



Write *Choldun* MANUFACTURING CORPORATION
NEW HAVEN, CONN.



**PERFECTION
PARTS**
are
Certified to excel



PERFECTION GEAR CO.
HARVEY, ILLINOIS

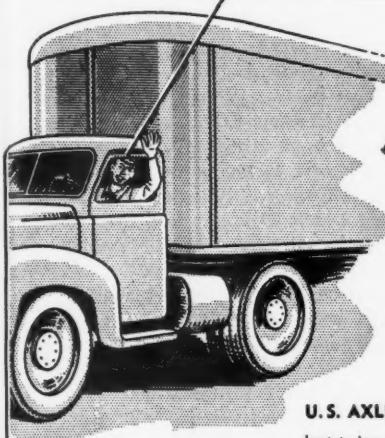
MOTOR AGE

*The Quality Magazine
of the Automotive
After-Market*

CLASSIFIED ADVERTISEMENT

For Sale: Heavy Duty Brake Shoe & Clutch Plate & Parts—Washer—Weight 550 Lbs. List Price \$563.55 NEW. Never used—we will sell for \$349.95. This Washer is built to last a lifetime. Urzil's Auto Supply, 98 E. San Salvador St., San Jose 12, Calif.

NO CHLOROPHYLL IN U.S. AXLES



... but they
sure are SWEET
to the truckers!

U.S. AXLE SHAFTS

last twice as long—
because they are tough. Better road
performance with fewer failures. They're
tough because only the best alloy steels
are used, skillfully heat-treated to
produce a quality shaft that will take those
heavy loads and rough roads—Best
answer to any shaft breakage problem is
U.S. AXLE SHAFTS.

The **US** AXLE COMPANY, INC.
POTTSSTOWN, PENNA.

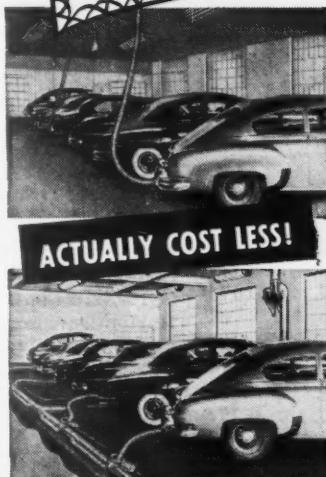
DET ENGINEERED WHEEL WEIGHTS

"The Quality Line"
A TYPE and SIZE for EVERY APPLICATION
SEE YOUR JOBBER OR WRITE FOR CATALOG

TURNER Manufacturing Co.
KOKOMO, INDIANA, U.S.A.



GUARANTEED EXHAUST GAS REMOVAL WITH AN ENGINEERED "NATIONAL" SYSTEM



ACTUALLY COST LESS!

Why take chances with a makeshift, "we hope it works" assembly when you can get a tested, approved "NATIONAL" System. You have a choice of 6 "NATIONAL" Systems—all engineered and guaranteed, in writing, to do the job. Delivered complete, with motor and blower units. Both overhead and underfloor systems for present buildings or new construction. Overhead Systems are priced from \$206.25 depending on number of inlets. Don't gamble. It takes only a 3¢ stamp to find out about all of the "NATIONAL" Systems—and you'll be surprised at how little they cost. There is a qualified "NATIONAL" man near you. Write today for literature.

The NATIONAL SYSTEM of GARAGE VENTILATION, INC.

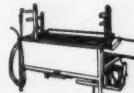
World's Largest Manufacturer of Exclusive Garage Ventilating Equipment

Dept. E3

330 N. Church St., Decatur, Ill.



FLO-TEST MACHINE
diagnoses radiator
ailments in advance



TEST and REPAIR BENCH
with Electric Elevator
...Rugged labor-saver



HOT CLEANING TANK
for hot chemical
cleaning



LEAK EXPOSER
"Locates the
Hard to Find Leaks"

INLAND offers Everything for your RADIATOR DEPARTMENT

ALL TOOLS, SUPPLIES, CORES and EQUIPMENT
for MODERN RADIATOR SERVICE



DRAIN COCK FLANGE



No. 2085 Gloves
All purpose
universal size



TANK
PATCHES
for cracks
around inlet



TEST PLUGS
Sets or single,
3/4" ID to 2 1/2" ID

Starting a New Radiator Department?
Training school for radiator repairmen plus complete operating
instructions and assistance available upon request.

Write for FREE CATALOGS
State Catalog Wanted—Supplies...Equipment...Cores

INLAND MANUFACTURING CO.

Dept. MA-10 1108 Jackson St. Omaha, Nebraska



Index to Advertisers

This Advertisers' Index is published
as a convenience, and not as part
of the advertising contract. Every
care will be taken to index cor-
rectly. No allowance will be made
for errors or failure to insert



AC Spark Plug Div.....	20-21	Niehoff & Co., C. E.....	102
A P Parts Corp.....	84-85-126-127	Oldsmobile Div.....	178
Accurate Parts Mfg. Co.....	82	Owatonna Tool Co.....	104
Air Express Div.....	65		
Ajax Auto Parts Co.....	114	Packard Electric Div.....	19
Allen Electric & Equipment Co.	157	Pedrick Piston Rings.....	116-117
All Power Mfg. Co.....	178	Pennsylvania Refining Co.....	122
Aluminum Co. of Amer.....	89	Pennzoil Co.....	180
American Bosch Corp.....	128	Perfect Circle Corp.....	61
American Chain & Cable Co. (Weed)	24-25	Perfect Equipment Corp.....	90
American Hammered Div.		Perfection Gear Co.....	174
Sealed Power Corp.....	109	Permatex Co., Inc.....	1
Aro Equipment Co.....	31	Postma Mfg. Co.....	178
Auto Specialties Mfg. Co.....	123	Proto Tools	2
Barrett Equipment Co.....	118	Pure Oil Co.....	147
Bay Mfg. Co.....	168	Purolator Products, Inc.....	7
Bean Div., John	87		
Bear Manufacturing Co.....	81		
Bendix Products Div.....	174	Radiator Specialty Co.....	110
Black & Decker Mfg. Co.....	67	Ramsey Corporation....	3rd Cover
Bonney Forge & Tool Works	120	Raybestos Div.....	10
Breeze Corp., Inc.....	174	Rochester Products Div.....	151
Bridgeport Chain & Mfg. Co.	103	Round Chain & Mfg. Co.....	103
Bronze Corporation, Inc.....	174	Round Los Angeles Chain Corp.....	103
Burd Piston Ring Co.....	66	Round Seattle Chain Corp....	103
Campbell Chain Co.....	124-125	Round Woodhouse Chain & Mfg. Co.....	103
Champ-Items, Inc.	120		
Champion Spark Plug Co.	14-15		
Chevrolet Motor Div.....	159	Saginaw Steering Gear Div...	177
Choldun Mfg. Corp.....	174	Schrader's Son, A.....	164
Chrysler Corp.	120	Sealed Power Corp.....	32-109
Chrysler Corp. (Parts Div.)	100-101	Shure Mfg. Corp.....	146
Classified Advertisement	174	Skil Corp.....	112-113
Clayton Mfg. Co.....	70	Snap-on Tools Corp.....	63
Cleveland Chain & Mfg. Co.	103	Socony-Vacuum Oil Co., Inc...	18
Clevite Service, Inc.....	91	Southern Chain & Mfg. Co... Co.....	103
Commercial Credit Corp.....	111	Southern Friction Materials Co.....	90
Country Gentleman	167	Standard Motor Products, Inc.	30
Curran Corp.	172	Standard-Thomson Corp.	161
Curtis Pneumatic Machy. Div.	69	Studebaker Corp.	59
DeKoven Mfg. Co.....	119	Sun Electric Corp.	11
Delco Products Div., G.M. Corp.	13	Sun Oil Company.....	12
Doan Mfg. Corp.....	138	Sunnen Products Co.....	152-153
Dole Valve Mfg. Co.....	148		
Echlin Mfg. Co.....	154	Thermoid Company... Back Cover	
Edelmann & Co., E.....	95	Timken Roller Bearing Co., The	29
Eis Automotive Corp.....	80	Trico Products Corp.....	149
Electric Auto-Lite Co., The	8-9-96-97	Turner Mfg. Co.....	175
Electric Storage Battery Co.	27	Tuthill Spring Co.....	92
Farm Journal	4	U. S. Axle Co., Inc.....	175
Federal-Mogul Service	6-88	United Motors Service	93-163
Federated Metals Div.....	86		
Felt Products Mfg. Co.....	115	Van Norman Co.	136
Ford Motor Co.....	189	Wagner Electric Corp.....	22-23
Fram Corp.	155	Walker Mfg. Co.	
Gatke Corp.	166	72-73-74-75-76-77-78-79	
Grizzly Mfg. Co.....	129	Wico Electric Co.	178
Guide Lamp Div.....	135	Wilkening Mfg. Co.....	116-117
Gumout Div. Penna. Refining Co.	122	Willard Storage Battery Co.	16-17
		Wilson, K. R.....	160
		Wiremold Co.	172
		Wolf's Head Oil Refining Co.	165
		World Bestos Corp.	106-107

*Proved and approved
for over 13 years*

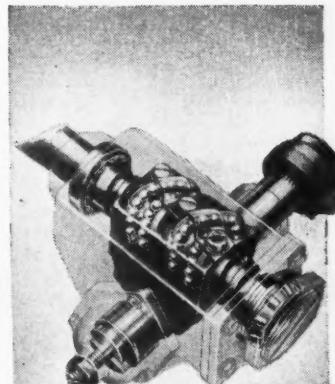
SAGINAW *Hydraulic* POWER STEERING

*Now available on 1952 model
Oldsmobiles, Buicks and Cadillacs

Since 1939, when it was introduced, Saginaw hydraulic power steering has proved its worth over and over again on thousands of commercial vehicles.

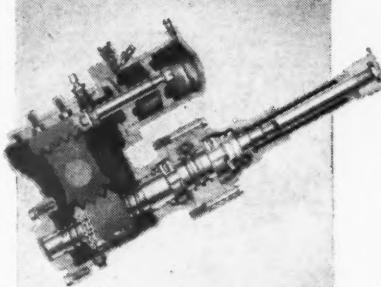
Now Saginaw hydraulic power steering is available on passenger cars! And already it has won wide acceptance, for "there is no steering like power steering . . . and no power steering like Saginaw hydraulic power steering."

This new application of the Saginaw hydraulic power steering principle is amazingly simple in design . . . has fewer moving parts, fewer parts in all. It retains the natural feel of ordinary steering at moderate speeds, but makes a spectacular reduction in steering effort at low speeds or for parking.



RECIRCULATING BALL PRINCIPLE

Saginaw's famous recirculating ball principle provides friction-free operation that is unique in the industry. It is a principle proved in over a million automotive steering gears.



HYDRAULIC POWER STEERING

A hydraulic booster multiplies driver steering effort, makes it easy to swing the wheel of the biggest car traveling at any speed—or even when standing still.

*Optional equipment at extra cost

IF IT'S EASY TO STEER . . . IT'S A SAGINAW GEAR

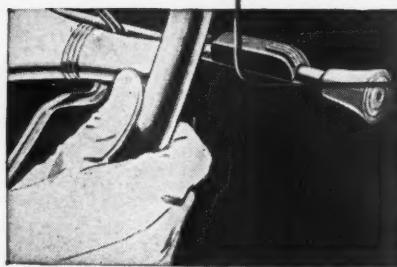
Saginaw
STEERING GEAR DIVISION

General Motors Corporation, Saginaw, Michigan

SSG
PRODUCTS

STEERING GEAR ASSEMBLIES •
STEERING LINKAGE ASSEMBLIES
• PROPELLER SHAFTS • DIESEL
ENGINE AND AIRCRAFT PARTS

Backsliders... Beware!



Every
driver
is a

ready prospect for the
WICO Autostop!

It happens on hills. Even on little hills. It happens to you!

Whether you are on the receiving end, or the backslider, the results are the same. Riders in both cars are shaken up . . . sometimes, bumpers are locked . . . other times, damage is considerable.

There's no backsliding in a car equipped with a Wico Autostop. When you stop on a hill—or on the level—the Wico Autostop makes the car stay put. It just can't roll backward. Or creep forward.

Suppose you drive with a Wico Autostop. You brake to a stop as usual, and touch the magic switch on the gearshift or selector lever. The car stays put! When you're ready to go, step on the gas and the brakes release automatically.

You don't have to keep your foot on the brake. And there's no need for riding clutch or accelerator.

Practically every car owner is a prospect for a Wico Autostop. Here is a brand new opportunity for you to sell a profitable item—not a gadget, but a real necessity. And one demonstration can make the sale. Write us now about the MONEY-SAVING DEMONSTRATOR OFFER that makes it easy to show your customers all the Autostop advantages. To show 'em is to sell 'em!

Each Wico Autostop kit contains complete illustrated instructions. Average installation time: 1½ hours.



Manufacturers of Magneto and the "Puff-a-lite" Automobile Lighter

WICO ELECTRIC CO., West Springfield, Mass.

THE "JOURNALIZER"

ENGINEERED FOR PRECISION CRANKSHAFT
TRUING

EASIER LESS COSTLY FASTER

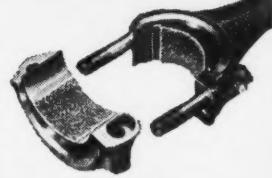


You can true journals to a smooth round finish quickly, accurately and economically thanks to the dependable JOURNALIZER. Precision JOURNALIZER give lasting bearing performance to your customer's car. JOURNALIZER, the mechanics' unbeatable "little helper," is simple to use. Crankpins can be trued on any make car or truck without the costly job of removing the crankshaft, cylinder heads, knee action, axle, steering, oil lines counterweights or engine supports.

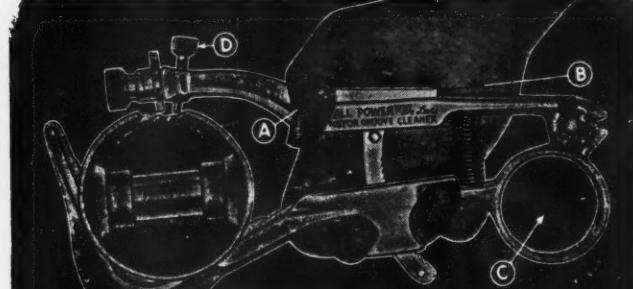
Remove the oil pan and spark plugs . . . install JOURNALIZER in place of engine bearing . . . Presto! the starter motor does the work.

JOURNALIZER is supplied with coarse and fine replaceable inserts for rough cutting and polishing.

JOURNALIZER will true No. 1 journal on ALL engines. "Universal Kit," five sizes service all cars and most trucks, (except Ford V8). \$35.00
Individual Kit 7.00 each
(Specify engine and model when ordering.)



Postma manufacturing company
691 East 18th Street, Paterson 1, N.J.
62 61st Place, Long Beach 3, Calif. Telephone: Long Beach 90-2240



all-Power
De Luxe Piston Groove Cleaner

A NEW and Revolutionary Principle
In Piston Groove Cleaners

OPERATION — The locking principle is quickly executed and positive. No back slipping. The large ring at "C" for inserting the finger in revolving the tool. Pressure at "A" locks the tool. Pressure at "B" releases it. Ring Groove Set Screw, letter "D" prevents cutter blade from dropping into large oil holes or slots in the ring groove. No other groove cleaner compares in its mechanical advantages.

CUTTER BLADE — The quick-setting, self-aligning, large, five-prong cutter blade feature permitting quick operation in adjusting to the ring-groove widths.

SERVICES RING GROOVES, WIDTHS
OF 3/32" & 1/4", incl., & Pistons 2 1/2" to 5".

Stocked by all leading jobbers



ALL-POWER MANUFACTURING CO.
400 ROOSEVELT AVENUE, MONTEBELLO, CALIF.

this advanced design helical ring
makes **10 up** the...



Right Combination

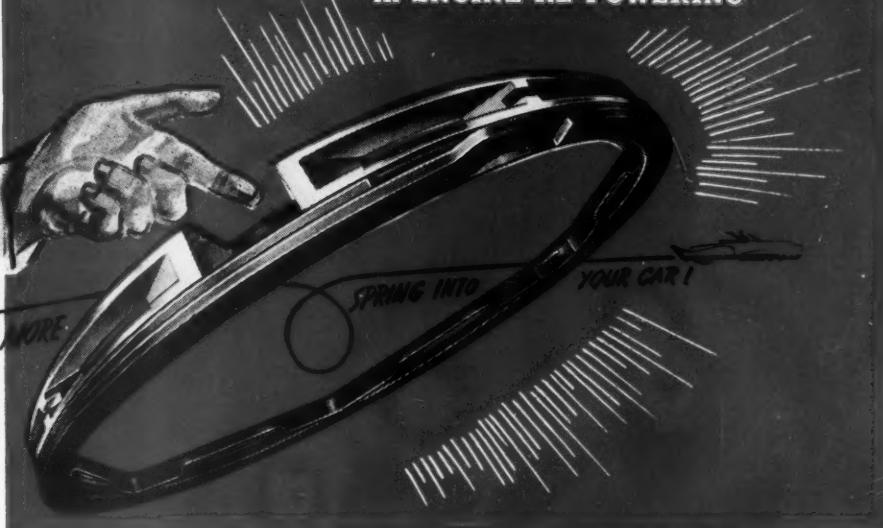
for all engine conditions

Regardless of engine condition . . . with 10-Up you can compensate for wear without resort to extreme pressures. The secret is in Ramsey exclusive steel Spiro-Seal Ring with its special spring action!

This special spring action reduces the need for pressure under all circumstances. It comes into play only as needed. Thus in perfectly straight cylinders, the pressures are comparable to original equipment rings.

Straight . . . slightly tapered . . . wavy . . . or extremely tapered . . . with 10-Up you can cure them all of both oil pumping and ENGINE DRAG! That's why with 10-Up you can assure your customers of

the Outstanding BUY
in ENGINE RE-POWERING



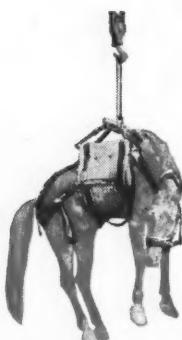
Ramsey Corporation St. Louis 8, Missouri,
A subsidiary of
Thompson Products, Inc.

RAMCO 10 up
FOR DOUBLE LIFE

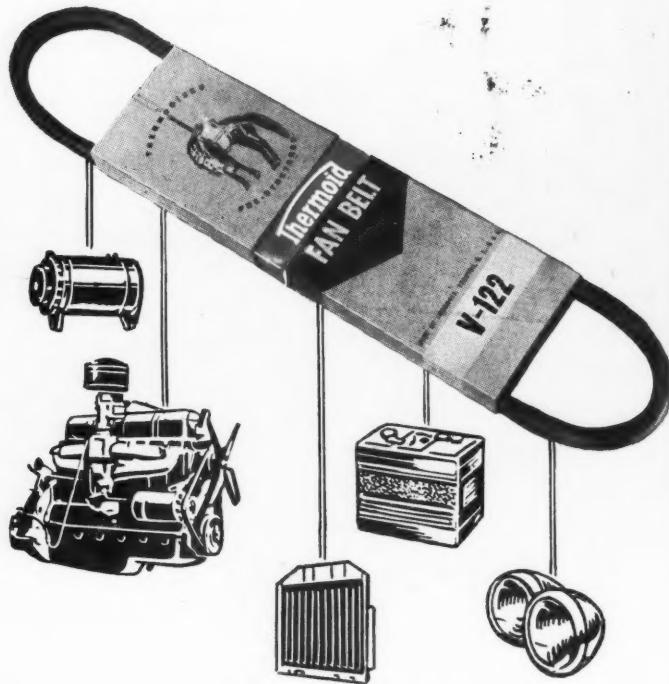
Now, 2 outstanding Ring Combinations and

RAMCROME 10 up *Chrome Plated*
Piston Rings
FOR TRIPLE LIFE

everything hangs on the fan belt!



Thermoid pre-stretched fan belts
are "A horse of a different color"



Yes, *everything* hangs on the fan belt: cooling, lighting, and ignition systems—and your profits!

When a broken fan belt leaves one of your customers stranded on the road, he doesn't blame the fan belt—he blames *you*! So, make it a point to remind your customers that automotive engineers say a fan belt should be replaced every two years—or every 20,000 miles.

Make your replacements with Thermoid Fan Belts. Better fit means easier installation. What's more, they are pre-stretched to assure *lasting* fit. Thermoid Fan Belts don't stretch in service. Because they never slip, they last longer—give more dependable service.

Make it a practice to show your customers the advantages of replacing a worn or stretched fan belt *before* it fails. And make replacements with Thermoid Fan Belts.

Thermoid

Thermoid Company • Trenton, New Jersey

Brake Linings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Clutch Facings • Thermoid Precision Process Equipment.